

American Aviation

The Independent Voice of American Aeronautics

MAY 15, 1943

What Goes, Mr. Berle?

THE secretive activities of Assistant Secretary of State Adolf A. Berle in his somewhat single-handed role as the mental giant to determine the postwar foreign air policies of the United States are deserving

the closest scrutiny by the air transport industry and Congress.

As self-appointed chairman of the government's interdepartmental committee on international aviation, Mr. Berle has picked up the ball and is mowing down the field without interference while aviation interests are engaged full-out in winning the war. Most of us didn't realize the game had started but through some prearrangement with himself, Mr. Berle seems to have blown the whistle under a cloak and leaped into a head start. Someone had better stop him before he plunges the United States into a lot of commitments we may not like.

It was fore-ordained that the Department of State would be a focal point for foreign air policies, but somehow some pictured Mr. Berle in the title for Mr. Berle can hardly be considered representative of the State Department despite his official capacity there. His self-propelled intrusion into the aviation picture can bode no good to the industry or nation.

It seems to be generally agreed from great many sources that Mr. Berle is arranging a U. S.-British conference on air policy to take place in June. Just who suggested the conference is not at all clear at this point, and perhaps doesn't make much difference, but the great secrecy and vague purposes of the meeting indicate that the American people and their aviation interests should be informed. It would be a

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Fortnightly Review



Fighters Span the Sea

Lockheed Lightnings, among the fastest of fighter planes, are now making mass flights across the Atlantic to the battle fronts. Two releasable gasoline tanks—one of which is visible beyond the left motor in the above photo—double the range of these craft.

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Late Bulletins

Seadrome Line Proposed

C. Bedell Monro, president of Pennsylvania-Central Airlines, revealed May 11 that his company intends to file application with CAB for a "seadrome" route between the U. S. and Great Britain. He described the seadromes as "floating islands of steel spaced at 800-mile intervals across the Atlantic."

Big Navy Air Fund Asked

President Roosevelt has asked Congress for \$4,934,725,000 cash and a contractual authorization of \$9,000,000 for naval aviation in the fiscal year starting July 1, 1943. Funds asked for naval aviation in fiscal 1944 now total \$6,574,725,000.

Upward Trend: Warplane production trend, at least in the immediate future, will continue upward. WPB Chairman Nelson's announcement that production reached 6,200 planes in March came as no surprise, was encouraging in its revelation that heavy bomber output passed the 500-a-month mark for the first time.

Trend of The News

A Levelling Off: Although production will continue upward, maybe reaching 10,000 a month later this year, an ultimate levelling off is predicted by some WPB officials. Such factors as materials problems and manpower shortages are overshadowed by another brighter situation: production is expected to reach a stage where further increases are unnecessary—we'll have, some experts think, more planes than we'll need. Donald Nelson has said that "the very great advances made in the last year cannot be sustained for many months longer . . ." This can lead to unemployment in the midst of a war.

Another Upward Trend: Look for British aircraft production to advance, possibly without the addition of facilities or manpower. The 10-man British air mission, headed by Sir Roy Fedden, recently returned to England after a thorough inspection of U. S. plane plants. Sir Roy immediately lauded U. S. production, made the significant statement that "they haven't anything to teach us English in regard to engine production, but we can learn a lot in other directions." Officials expect that the British, merely by applying certain American methods, can up production anywhere from 3 to 10%.

Downward Trend: American and British bombings are hurting German production, have probably forced it below the 2,000-a-month mark, experts say. But these same experts are still worried concerning the whereabouts of the Luftwaffe, and can't convince themselves that the German air force is as weak as recent events have made it appear.

International Picture: The Civil Aeronautics Board's announcement that it has underway a comprehensive study of the postwar international aviation situation has been received favorably by industry, and will boost CAB's stock. Astonishing to many observers is the fact that CAB has laid the cards on the table by inviting industry to express its opinion.

(Turn to page 6)



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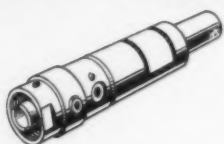
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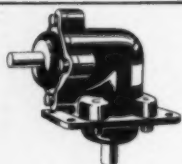
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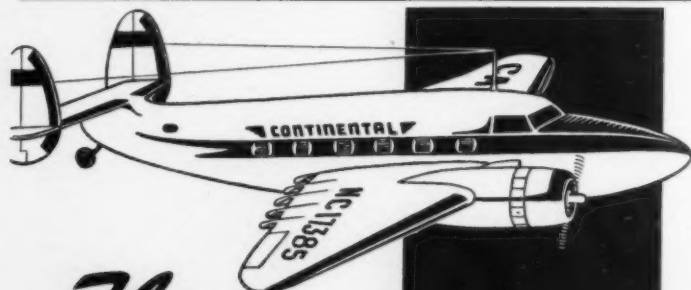


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American Aviation

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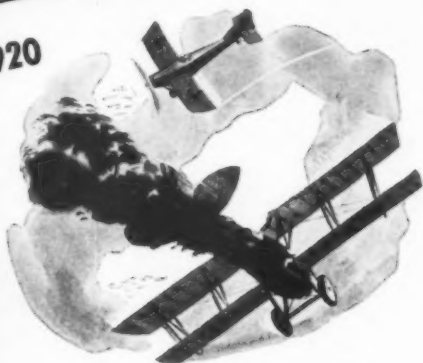
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1943



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(Continued from page 1)

ions on global air routes. It's a trend they hope will continue.

Air Mail: More favorable consideration for air mail in the wartime air transport picture is expected. Bottle-necks may be broken by release of equipment to the airlines. Partially responsible will be a more aggressive attitude on the part of the Post Office Dept., which in the past has been inclined to let itself get kicked around.

Glider Activity Appointment of Richard C. du Pont as special assistant to the Commanding General, Army Air Forces, in charge of the glider program, may be an indication that this activity is not as dead as it has seemed. It has been made clear that du Pont, although for the present a civilian, will have the authority of an assistant chief of Air Staff. He has resigned as president and chairman of the Board of All American Aviation, indicating that he expects to stay a while.

Providing the Engineers: The military at last is recognizing the fact that engineers are completely essential to aircraft production, although only after constant reiteration by some of the leading industry executives. As a result, a program is being shaped up to pipe college engineering graduates directly into industry rather than into the armed services which have made heavy inroads into engineering personnel during the past year.

As tentatively proposed, the Army, Navy and War Manpower Commission will set up a program of in-college training pursuant to which student engineers of draft age, or near-draft age, will be permitted to enlist in the services and will be given uniforms, but will be allowed to finish their courses. These courses, while shaped to Army needs, will be cut or modified for the best immediate application to industry needs. War Dept. has called in industry representatives for advice on curriculum for the aeronautical field.

Upon graduation, engineers—and there are many of them—who otherwise would be inducted into some phase of limited military service will go direct into industry instead. Secretary of War Stimson has prepared a memorandum to this effect which, it is understood, will give industry nearly all the engineers it needs.

Providing the Materials: Gathered around the table in Washington during the past few days were top executives and materials men of the aircraft industry in a significant conference with key procurement officials of the War Production Board, Army and Navy which promised to bring a virtual item-by-item count of the critical materials needed in the aircraft production program.

Certain show-downs were expected, particularly in regard to differences in actual materials inventory of the aircraft companies and the quantities which WPB has been claiming to exist in the national reservoir. Also of prime concern was the devising of ways and means of effecting a more constant and smooth flow of materials to the factories under the Controlled Materials Plan. Pre-conference sampling of opinion showed industry representatives strongly opposed to some new CMP ideas which have been cooked up at WPB.

On the agenda also was the question of ways and means by which shortages of material in individual plants can be quickly met through CMP.

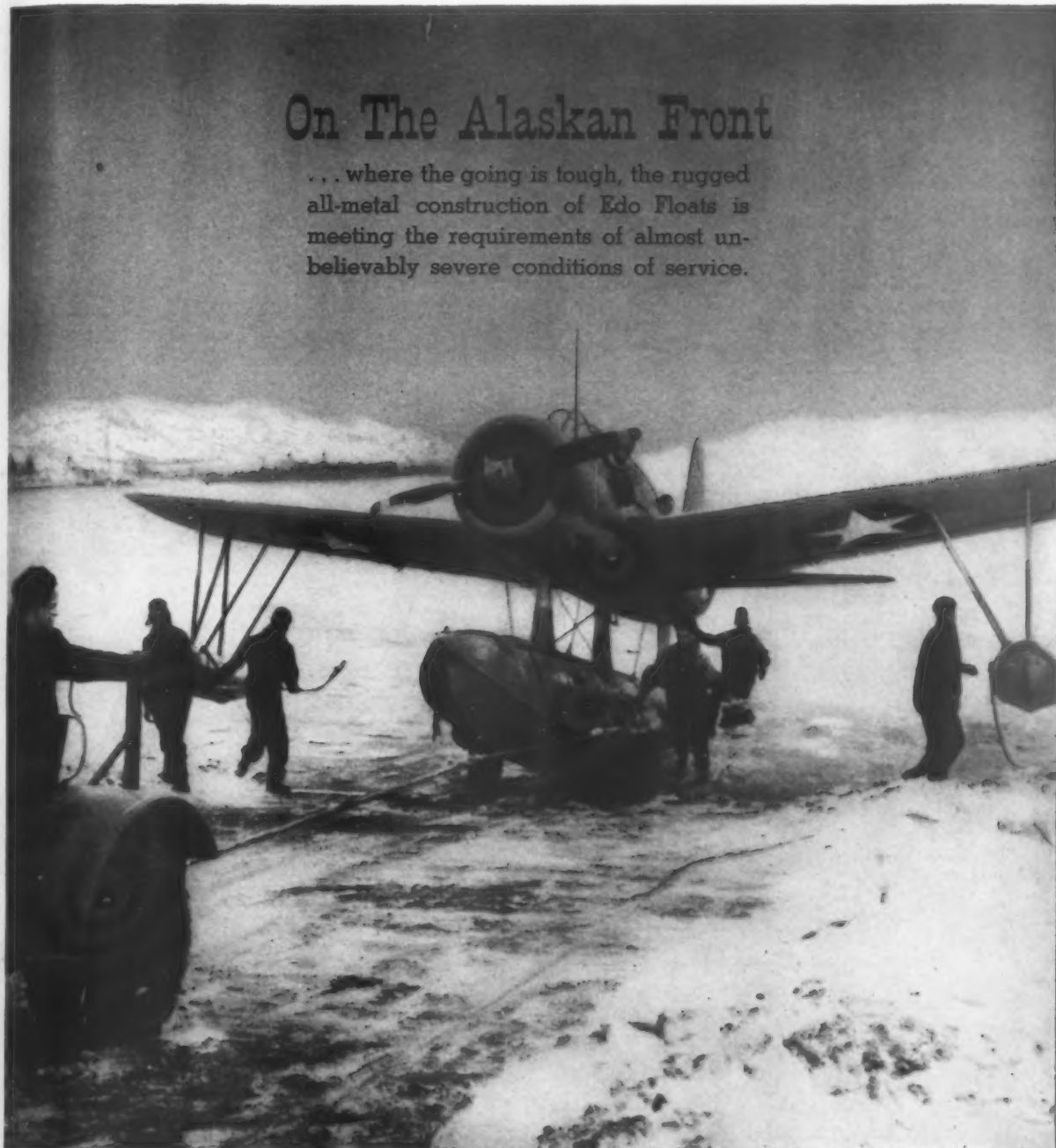
Greatest significance of the conference lies in the undercurrent of genuine effort between industry and government to get together on a factual basis, and to deal in cold, concrete facts and figures which everybody understands. The conference was the first major project undertaken by the National Aircraft War Production Council and underscores another notable trend in the manufacturing industry, to which this council, and the East and West coast groups which comprise it, have contributed the most noteworthy impetus.

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Editorial

(Continued from page 1)

black day indeed to awaken some morning and find that Mr. Berle has laid out for this country a government-owned airline program.

It certainly is coming time for some preliminary discussions on postwar air policy, but one of the prime requisites of such discussions should be the removal of secrecy. By what authority is Mr. Berle consulting only with the British, and just who has determined what this country's position is with regard to foreign air operations?

This secrecy business can be overdone. Only very recently Mr. Berle gave direct orders to each member of the interdepartmental committee not to discuss committee matters with his wife or best friend. And only recently Mr. Berle "persuaded" the Civil Aeronautics Board to reverse itself in the Caribbean air route decision, as reported in this issue. Had it not been for the good American citizenship of some of the committee members, not even the existence of the committee would have been known.

Just who is this Mr. Berle who suddenly has popped up to be the No. 1 mentor of U. S. aviation? Certainly he is not known to the aviation industry, and, indeed, the aviation industry has been quite free of the Berle type in Washington. The industry can work with, and get along with, the politicians of the Post Office Department (who look pretty good compared with the long-haired literati from New York). They can get along with a representative body such as the Civil Aeronautics Board which still believes in private enterprise. They can get along with the elected representatives in Congress. But they have had little to do with the suave, learned, tricky legal lights who have been predominant in so much of the Washington government picture. But if the industry has been neglected, Mr. Berle evidently intends to make amends, for he's jumped in with both feet.

We last had seen Mr. Berle, until very recently, at a cocktail party in Greenwich Village before the Village crowd moved down to Washington into government offices with plush rugs, chauffeurs and three or four telephones. The very profound Mr. Berle of today is far different from the happy and gay Mr. Berle in Greenwich Village. Today he holds the reins of considerable power. He is the high-powered thinker who decided to solve the U. S. foreign air policy and get it done before too much hullabaloo was raised in industry or Congress.

It should be noted on the side that Mr. Berle is riding roughshod over previous State Department procedures. He has his men planted in various places so that nothing escapes his notice. Serious internal friction has developed as a result.

According to a profile written on Mr. Berle some months ago in *The New Yorker*, he does his best thinking and uttering in the bath tub. Not wanting to miss anything he said on such awe-inspiring occasions, and being his best listener, his wife had twin bathtubs installed. That was in the good old Greenwich Village days. Today in Washington Mr. Berle ascends every afternoon to a fleecy cloud and ponders at great length on this great new thing called aviation. That's where the big ideas about international airline corporations—

jointly owned by United States—come in. To be very frank about it, we don't know what Mr. Berle's platform is, and judging from the profound mumbling that came forth on a recent visit, we aren't sure he has a platform. But we don't think he knows anything about air transportation, airpower, the airplane, reciprocal agreements, operations, or anything else directly concerned with the subject. Perhaps most important, we don't think he's a very smart trader in the tough hard-boiled and realistic international arena.

In any event, the time for laying cards on the table is approaching. Let's have some official word on the U. S.-British conference, let's make sure that the best interests of U. S. aviation and the American people are served up in orderly fashion. Just what is going on? And to what extent does Mr. Berle represent the United States Government?

The United States must play a fair but firm game in postwar air policy. If American airlines fly to foreign lands, we must expect foreign airlines to fly to our ports. We want neither more nor less than our fair share of the world's air routes. We want no government ownership or participation. We want no secret commitments. We want no United Nations airline corporation. We want private enterprise to have an opportunity along the soundest and most constructive competitive lines to bring an economical, efficient and convenient air transport service to the peoples of the world. We want realism and common sense, not dreams.

Mr. Berle now has the ball and is running fast. It's time for a quick tackle and a return of the ball to the starting line until the teams are ready for the whistle.

A Raw Deal-- Very!

SOMETHING is definitely wrong in the decision of the AAF Technical Training Command to let its contracts with civilian technical training schools lapse on June 30. A thorough airing of the reasons behind the move is in order. The facts in the case simply don't jibe. To eliminate the well-equipped and well-staffed civilian schools, and to continue to rent massive hotels, smacks of a raw deal.

The inexcusable part of the TTC decision is the procedure it has taken. By permitting the contracts to lapse the government is relieved of any financial responsibility—technically—but there is a moral and ethical responsibility in which the people of the United States have an interest.

The TTC has gone heavily into the hotel business which may be all well and good for hotel owners burdened with useless property in wartime, but to force out of business thirty big going concerns that are part and parcel of the aviation industry simply doesn't make sense and needs an investigation.

As recently as two days before the Army gave the contractors what amounted to a sixty days' notice, the TTC was ordering the civilian schools to make changes, alterations and improvements in their establishments. As recently as four months ago the TTC ordered all of its contract schools to double their staffs. Why this

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Editorial

(Continued from page 8)

sudden repudiation? Why this preference of hotel leasing over well equipped schools operating on Army standards?

To keep the facts straight, who pulled the Army out of the hole on training? When the European war broke out in September, 1939, the AAF had exactly one old antiquated technical training center at Chanute Field. Trainees were given only six hours of training per day in old World War I hangars. By Pearl Harbor the TTC had only five of its own training centers. In the meantime it begged, pleaded with, cajoled and high-pressured the private civilian schools to load up with Army training, to build barracks, mess halls and school quarters on Army specifications. The private schools were the fair-haired boys and received flattering praise for the splendid spirit of cooperation and the excellent quality of the men who were trained.

Now the TTC is about to destroy a private industry because it says it has reached the peak of its training program. But it is very strange that the TTC intends to keep the massive hotels it has leased, and continue to employ civilian instructors (at higher competitive wages) even though these hotels, for the most part, are not adequately equipped for technical training. That the civilian schools will be destroyed is not a matter of conjecture, for the schools have no reservoir of students from here on, and shelved whatever private work they had in order to cooperate with the Army.

The civilian schools have had long experience in training men. The TTC has plenty of evidence in its files, in the form of reports from the combat areas, making it very clear that the graduates of the civilian schools are generally superior and better trained than the products of the TTC's hotel mills. If the TTC complains that its quotas for training have been reduced, there could be nothing more constructive in this war than to increase the number of hours of training.

It costs the people of the United States \$250,000 to put a fighter pilot over Europe. Yet that pilot is helpless unless his plane is serviced properly. Shall we relate some actual instances of what has happened because of poor training of mechanics? Shall we tell of the fighter pilot who took good aim and his machine gun failed to work because the mechanic failed to prepare the mechanism properly? And yet the TTC, which now bemoans its reduction of quotas, has been rushing the mechanics through in a 15-week course plus four weeks at a misnamed "factory" school. (Poor lads, most of them never even see a factory from a distance!) Doesn't the TTC recall that only two years ago the CAA's requirement for a mechanics' license was two years of training?

No, the TTC has bungled its planning job pretty badly. But to kick out thirty reputable, reliable, efficient and highly valuable civilian schools, just because of bungling, is pretty poor stuff. It's also pretty raw to pull the hotel business out of a hole and let a valuable aviation industry slip into one. The TTC order most assuredly needs looking into—from more than one angle!

A Significant Contribution

THE address last month by CAB Chairman L. Welch Pogue before the National Aeronautics Association chapters of Minneapolis-St. Paul deserves far more attention in the press than it actually received. It was one of the most important utterances on foreign air policy yet given by any government official. As an authoritative spokesman for U. S. aviation, Mr. Pogue is building a very fine solid record and the original thinking he is doing is a most encouraging sign.

In the Twin Cities speech Mr. Pogue advocated the adoption by all nations of the "Right of Commercial Air Transit" which seems to us to be the first fundamental step that needs to be taken to insure the greatest and most equitable use of the air trade routes by all people. This right of commercial air transit is defined as the right of commercial aircraft to fly through the airspace of any nation which has agreed to this international arrangement.

Heretofore in the field of private flying the right to pass through the airspace of a foreign country was known as the right of innocent passage, but there has never been a term for commercial flying. To Mr. Pogue the aviation interests of the world can well be indebted for having coined a very practical and expressive term.

This right of commercial transit would include the right to land at agreed airports to refuel, to make repairs, or to take refuge from bad weather. It would not include the right to discharge or take on passengers and cargo. Obviously the keynote to such international agreement is the necessity of obtaining the signatures of as many nations as possible.

The next step as outlined by Mr. Pogue is the obtaining of rights for Commercial Outlet, which he defined as the right to discharge or take on passengers and cargo. Such a right would not include the right to carry traffic between points within a country—a right reserved, naturally, for a nation's own airlines.

Granting of the first step—the right of commercial air transit—by all nations would amount to giving aviation a world charter, he said, constituting a worldwide framework and facilitating the future establishments of commercial outlets at all points where future world developments may make them desirable.

It seems to us that Mr. Pogue has prepared a pattern that the United States, and all other nations, can accept when the time comes for international agreements. Without such a charter the future air routes of the world will be bogged down in infinite red tape. It is a basic principle so simple, and yet so fundamental to the future of aviation, that we hope it will not be overlooked in the international discussions soon to come. Meantime we know we reflect the feeling of the industry in saying that Mr. Pogue continues to grow in stature and leadership. He is the finest and most universally respected government official aviation has had in this country.

WAYNE W. PARRISH

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CAB Launches International Airline Study

Industry Asked for Opinions on Postwar Global Operations

By ERIC BRAMLEY

PLACING itself squarely in the picture as one of the agencies to be reckoned with in the formulation of postwar U. S. policy on aviation, the Civil Aeronautics Board on May 5 announced that it was starting a comprehensive study of international aviation.

As its first step, the Board is seeking "from qualified persons" the answers to a broad series of significant questions on postwar global flying.

Answers to the questions, it is learned, will be sought not only from the aviation industry but also from interested Congressional committees and from other parties.

It is believed that circulation of the questions at this particular time was prompted by the recent filing of numerous applications by domestic airlines for postwar entry into the foreign field.

One of the queries deals directly with this subject, asking: "To what extent and under what conditions should United States air carriers engage in both domestic and international air transportation?"

Cover Broad Field

The other 16 questions cover a broad field. Answers are sought on problems of reciprocity, how negotiations with foreign governments should be conducted, whether there should be one U. S. international airline or whether "regional" companies should be authorized, whether surplus government planes can be adequately converted for commercial use, how the manufacturing industry can be converted, etc.

Announcement of the study was considered significant in two ways: (1) it marks the first time the industry has been given a chance to express opinions officially on its own future, and (2) it was seen as an attempt by the Board to answer critics who have claimed that it has spent too much time "regulating" and too little time "promoting."

Asked by *American Aviation* why the study is being conducted by CAB rather than by the Interdepartmental Committee on International Aviation, a high CAB official asserted that the Board is the logical agency and that it has the staff and facilities to handle the study.

He emphasized that the questions were prepared and circulated after conferring with the Committee, and that the Board is working in "complete harmony" with that group.

Answers are being sought by June 1. Whether or not they will be made public has not been decided. The CAB official

said that requests for confidential treatment of answers would be honored.

Complete text of the questions, with CAB comments in parentheses, follows:

1. What international air routes are of major commercial importance for postwar United States operations?

(A complete map recording a judgment as to the routes most desirable on the basis of commercial considerations and operating factors would be helpful. The map might well be accompanied by an analytical commentary on the relative importance of the routes for early operation, the trading centers at which commercial rights are most desired, and technical operating factors in relation to existing and prospective types of flying equipment.)

Reciprocity?

2. Should there be a reciprocal exchange with other countries of general rights of air passage, together with the right to land for refueling and other technical purposes, in international air transport?

(Rights of transit for commercial aircraft are to be distinguished here from commercial air rights, i.e., to engage in trade. The rights of transit referred to in the question are those which would permit the air carrier operations of one country to traverse the territory of another without the right to pick up or discharge traffic within that country.)

The acquisition of a general right of freedom of transit in this sense might be sufficiently advantageous to justify the United States in generally granting on a basis of reciprocity similar transit rights to foreign operations over its territories. On the other hand, if there is no general reciprocal exchange of such rights of transit, presumably such rights would be acquired and granted by the United States only in connection with negotiations respecting specific transport services.)

3. In the event rights of transit through United States territory of the character covered by question No. 2 are granted to foreign carriers, should their operations be restricted to a designated small number of airports and airways, or be permitted to use any airport or airway available for general civil use?

4. Should those foreign operations authorized to pick up and discharge international traffic within United States territory be permitted to do so only at a few points on or near our coast or borders, or, on the other hand, be permitted to do so at points well into the interior?

(Customs, immigration, and public health problems have an important bearing on questions Nos. 3 and 4. It must be kept in mind also that if a restrictive position is taken by the United States on questions Nos. 3 and 4, it will be likely to be followed by other

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No Action to be Taken Now on Postwar Routes, CAB Warns

Coincident with announcement that an extensive study of postwar international aviation is underway, the Civil Aeronautics Board has reiterated its policy of not acting now on applications being filed for postwar global air routes.

The Board pointed out that on Dec. 12, 1941 it announced that no further action would be taken in proceedings involving applications for new routes.

"Such action was taken in order that the immediate and maximum attention of air carriers and their personnel and of the Board, as well as of other government agencies concerned, would be available for the most efficient discharge of the emergency demands growing out of the war," CAB said.

"At that time the Board stated that the new policy would remain in effect for such a period of time as might appear to be appropriate in the light of existing conditions and future development. Applications involving special considerations of national interest requiring early inauguration of the services involved were excepted and such applications have been handled on the basis of temporary authorizations.

"On Aug. 29, 1942, the Board concluded to carry to decision those proceedings in which the hearings had been completed and to assign hearings and to proceed to

disposition of applications to include additional stops on existing routes where no controversial issues are involved. Certificates issued as a result of these proceedings contain a condition that they will not become effective until the Board notifies the holder that the national defense no longer requires a delay in inauguration of service. The Board also stated that its policy of Dec. 12 would remain in effect for all other cases until such time as the circumstances referred to make further relaxation of the restrictions appropriate.

"The fact that applications are currently being filed does not mean that the Board has relaxed the policy outlined above with respect to pending applications for new routes or amendments to existing routes either in the domestic or foreign field.

"Such applications will remain on file until such time as the Board shall conclude that the national interest requires a further relaxation of its policy and consideration of the proposed services."

The Board concluded with a statement of policy that was of great importance to airlines that have not filed applications: "The Board will give no weight to the relative dates of filing when passing future judgment upon competing applications."

Army Cancels Contracts of Civilian Technical Schools

By BARBARA B. C. McNAMEE

ARBITRARY termination of all contracts with civilian technical training schools was announced by the War Dept. on May 5, with the result that many of the operators are being left high and dry with equipment they cannot use.

The War Dept. stated that "the Army Air Forces has reached the peak of its technical training program and a levelling off into a replacement training phase makes possible the gradual abandonment of such training in civilian contract schools."

Although the Army declared it would let all contracts lapse at the date of expiration, schools were told they must close by June 30. Over a dozen whose contracts have already expired were dropped in the past month.

"The result will be a gradual absorption of all technical training operations into AAF schools," it was stated.

Among the reasons given by the Army for this move were completed expansion of its own facilities and personnel, and a present need for a very much smaller number of men in training.

The Army also claimed that "concentration of technical training on Army posts is expected to result in greater efficiency and uniformity of training."

With no provision made for their future, they find cold comfort in the praise lavished on them by Technical Training officers. "As a group," one officer declared, "these operators have responded to the Air Forces' urgent demands for additional training facilities with most commendable energy, skill and patriotism. They have done a magnificent job. It was an emergency job which had to be done and one which taxed training facilities of this kind throughout the nation." The War Department emphasized that the fact that the AAF is discontinuing training in the civilian contract schools "is not to be considered in any way as a reflection on the ability or efficiency of the contract operators."

Protest Abandoned

An original move for mass protest by the affected operators fell flat when West Coast trainers declared their intention of accepting the Army's terms. They gave as reasons that the Army would not change its intention to discontinue aviation mechanic training by contract after June 30 because ample Army facilities now are established to carry on all necessary training and because in some classifications more men have been trained than are needed. They further believe that the Army intends to make financial adjustments with commercial schools on a basis that will be fair to the schools and that any move on the part of the schools as a group to try to change its pre-determined intention might have unfavorable reactions.

An official release explains the background and current set up of the Technical Training Command. "At the outbreak of war," it states, "the AAF had

five technical training schools in operation at Chanute and Scott Fields, Illinois; Lowry Field, Colorado; Kessler Field, Mississippi and Sheppard Field, Texas. Today there are more than 100 technical training schools in operation by the AAF including those operated by civilian contractors. They are scattered from coast to coast in every section of the country.

"Not only has there been a twenty-fold increase in the number of technical training schools, but there also has been a great concentration and intensification of training. The peace-time course of nine months for maintenance mechanics in the Air Forces, for example, has been compressed into less than 19 weeks of the most highly intensified training. Other types of training have been shortened in a somewhat similar ratio. The average Army Air Forces Technical Training School today has a total personnel strength of 15,000 officers and enlisted men."

200,000 in 1942

Information received from training school authorities adds that more than 200,000 trained technicians in over 30 different lines were graduated during 1942.

"The expansion of the Technical Training Command's scope proceeded more rapidly than was thought to be possible a year ago. Large-scale emergency measures," it continues, "were adopted to house, feed and instruct the men it was assigned to train. Examples are the hotels, office buildings and other facilities the command leased in cities throughout the nation. Flying fields and technical schools were built on tracts that a few months before were farm lands." By taking over this training in their own schools, the Air Forces believe they will be able to move students out of civilian schools in metropolitan areas and thus lessen the drain on housing and other facilities in these areas.

The War Department statement concludes: "Although the AAF is now in a position to begin withdrawing civilian contract training into its own schools, no new Air Forces schools have been established for some time. Some expansion of existing Army schools is in progress, but no new installations are anticipated at this time."

Reliable sources state that Major General Walter H. Frank, commanding general of Air Service Command and Major



New Fighter: The Brewster F3A shown above, the Navy's newest fighter, successfully passed its first flight test in late April. A counterpart of the F4U Corsair, the F3A is designed for carrier operations with the fleet. It is a full-winged single seat monoplane with a rated speed of 400 mph and is powered by a 2,000 hp Pratt & Whitney air-cooled engine.

Luftwaffe Skips Iceland

A marked decrease in the number of German flights over northern American bases during recent months is reported to the War Department by Lieut. Col. Donald Hudson, commander of the U. S. AAF in Iceland for 16 months.

The fact that the enemy has been flying fewer reconnaissance missions over this area probably can be attributed to Hitler's diminished air strength and his great need for more planes in other theaters, according to Col. Hudson.

General Walter R. Weaver, commander of Technical Training Command met recently in Florida. General Frank is understood to have objected to dropping the school contracts on June 30 on the grounds that more thorough training should be given AAF mechanics, now that a large enough staff has been developed. He believes that the present set-up of 19 weeks in school and four in factories is not enough to turn out a skilled mechanic.

Perhaps the most controversial aspect of the technical training situation is this question of the necessary length of time involved in giving inexperienced men adequate mechanical training. There are many who back General Frank in saying an intensified, compressed course lasting 19 weeks is totally inadequate. Before the war the Civil Aeronautics Administration required two years training for commercial aviation mechanics. The airlines refused to hire men who had not had an additional three years experience. Many training officials believe that there is as even more pressing need today for thorough training of mechanics and technicians in view of the AAF's forecast of tremendous expansion in production of combat planes, many of advanced design and equipped with new facilities.

Refreshers Urged

Reports have trickled in from every battle theatre of crashes caused by incomplete repairs of motors and imperfect charging of guns. The new low flying techniques for flying bombers make it essential that planes be in perfect condition because every crash in such operations is fatal. With the constant changes and improvements now being made in engines and aircraft parts and the great differences between types, many operators and officers believe that the Technical Training Command should now begin large-scale refresher courses for its mechanics.

There is a final factor which may alter the situation to some degree, providing a new source of trainees for these abandoned operators. CAA has petitioned for funds to establish a mechanic training program under the supervision of War Training Service. On July 24, 1942, the Civilian Pilot Training Act was amended to authorize CAA to train civilian technicians and mechanics but no provision was made in the Appropriations Act for funds to enable the program to be started. CAA has now gone before the Bureau of the Budget with the request that approval be given to the submission to Congress of an appropriation request for the fiscal year beginning July 1. It is understood that this request is being given more favorable consideration now than ever before.

Fighter Planes Flying from U. S. to Africa

Extra Gas Tanks Used For Overseas Flights Of Big Air Armadas

BY air ferry and carrier ferry, the United States is now delivering thousands of fighter planes—along with the steady procession of bombers and cargo craft—across the high seas to combat theatres in many sections of the globe.

Most sensational addition to the saga of American wings around the world was the release by the War Dept. last fortnight of information regarding mass flights of Lockheed Lightning P-38 fighters across the Atlantic—the first public revelation that such long-range fighter ferrying operations could be carried out successfully.

This speedy delivery of fighting planes, releasing ocean shipping space required for other cargo, not only means a tremendous effect upon the course of the war but also steps up the potentialities of the planes of the future.

2,500 on Carriers

Disclosure that more than 2,500 fighting planes also have been transported to the world's warfronts by aircraft carriers of the U. S. Navy added another chapter to the story of mass delivery of U. S.-built planes.

These facts also began to knit together a better answer to the question, "Where is the vast output of American planes going?" a question which has been much shrouded in military censorship and has had the public speculating and wondering.

The War Dept. said that long range ocean flights by the single seater fighters are made possible by the use of streamlined, laminar flow releasable tanks hung from special fittings under the wings (described and pictured in May 1 issue of *American Aviation*).

Follow Secret Route

"The first mass flight of Lightnings over a trans-oceanic route involved the movement of a number of planes running well into three figures," said the department. "Only one was lost at sea. Six others were damaged in bad weather landings but their pilots, uninjured, were rescued. One made the last 300 miles of the ocean crossing on one engine."

Since that first trans-Atlantic ferry flight by fighters following a secret route, regular Lightning ferrying operations have been established across the South Atlantic to the Tunisian front and other battle areas.

Dozens of Lightnings have flown to England and continued on to the African front, completing a California-to-Africa journey of more than 8,000 miles. Larger numbers are flying the longer South American route.

The fighters have been especially equipped for the Atlantic crossings, carrying additional long-range oxygen equipment as well as releasable gas tanks. On the northern crossing, Arctic packs and rubber boats are carried. On the overland

stretches via the southern route, "jungle kits" are provided, replacing the rubber boat and sea equipment used for the ocean hop. Concentrated rations are provided on all flights.

Mechanics and factory experts have accompanied the fighter flights in Army transport planes, assisting in their servicing and maintenance. Boeing B-17 Flying Fortresses also have joined forces with the fighters to take care of the navigation problems, each Fortress, with its elaborate navigational equipment, acting as a "shepherd" for several of the fighters.

Development of the releasable tanks, which approximately double the normal long range of the Lightning, is one of the noteworthy accomplishments of the aircraft industry. They were developed when the difficulty of finding sufficient shipping space to move the fighters overseas became apparent, were in production within 90 days after the AAF placed its order, and have been coming off a conveyor belt system at the rate of one every four and one-half minutes.

Tanks Cost Only \$100

Each tank weighs 90 pounds empty, carries 165 gallons of gasoline, bringing its total weight, filled, to about 1,000 pounds. Lockheed claims the aerodynamic problems have been so skillfully overcome that the two tanks, when full, reduce the speed of the plane only 4% at top speed.

At the time the Army made its urgent request for a tank that would cost less, use no critical material and be adaptable to a much higher rate of production, an aluminum tank was being manufactured for Lockheed by a nearby subcontractor. The first 2,000 had cost the government \$678 apiece. Lockheed's chief production engineer, Harold Harrison, tackled the job and the final product was a streamlined tank built in two half shells of 1010 body steel, .024 inch thick, and costing less than \$100.

The manufacturing and engineering department under Marlin W. Coker devised

a 475-foot conveyor, most of which was from presently unused equipment of the Studebaker Co. An engineering group under L. H. Ferrish developed a special portable steam welder and a roll-spot welding fixture, and the assembly went on a three-shift basis with a record of 130 tanks for one shift. Lockheed has dubbed its product "Tear Drops for Tojo."

The Navy's announcement of its "carrier ferry" operations said that they are moving across both the Atlantic and the Pacific, and that in addition to planes the carriers are transporting fuel and other supplies.

Of the planes thus moved, more than 1,000 were landplane fighters which were lashed to the flight and hangar decks of carriers—both the big battle carriers and many converted merchantmen. These planes took off from the flight deck while the carriers were still hundreds of miles at sea, and flew on to advanced bases.

Loss Factor Cut

Other aircraft were Navy and Marine Corps planes which, after use as a fighting and striking force from carrier decks, were flown ashore to operate from advanced land bases, such as Guadalcanal. In the initial force which moved on North Africa, one carrier alone transported nearly 100 Army Warhawk fighters which captured enemy airdromes and cleaned out potential nests of resistance along with Navy planes and ship gun batteries.

The carrier ferry obviates necessity of disassembling and re-assembling planes before and after shipping and, because of their superiority in speed as compared with freighters, sharply reduces the dangers of loss at sea. In most instances the carrier ferry provides its own escort, launching torpedo bombers from its flight deck to fly anti-submarine patrol.

Beginning long before the Tokyo raid, Navy carriers were ferrying landplanes to the west coast of Africa—"under the bulge"—for flight northward to the Libyan campaigns. Following the occupation of North Africa, this activity was transferred to the shortened route and substantial numbers of carriers converted from merchantmen were put to work.

Cargo Mass Flight

A recent dispatch from India added to the story of long-distance plane movements, describing one of the longest and biggest mass flights of twin-engined cargo planes in history—a 15,000-mile America-to-India trip by way of Africa which was made in four and one-half days. This flight, it was reported, took into India 90 tons of cargo without loss.

Lieut. Col. W. C. Goldsborough U. S. Army retired, loaned by the Curtiss Aircraft Co., was project engineer and headed the flight. Captains of Northwest, Transcontinental, and Western airlines piloted the planes. It was stated that Capt. O. G. Fredericks of Washington, D. C., a TWA pilot who has made 40 round-trip trans-Atlantic flights, had only one hour of flying time in one of the new ships before taking it on its trip half-way round the world.



Washington Daily News

2 Firms Enter Helicopter Field; Use in Anti-Sub Work Denied

The helicopter made a new bid for attention, with several important developments coming to the front during the past fortnight, but all indications were that a sudden flurry of publicity had set off a new batch of groundless rumors regarding the imminence of widespread helicopter use.

In the aircraft industry, two new announcements headlined the increasing attention on the possibilities for rotating-wing craft:

1. Harry Woodhead, president of Consolidated Vultee Aircraft Corp., revealed that his company is at present working on a version of the helicopter, stating that it would be used as a postwar model.

2. Cargoes, Inc., a subsidiary of the Lend-Lease Administration, announced it had signed a contract with Henry J. Kaiser to produce two helicopters for the British government—with large-scale production to follow if they are successful.

The latter announcement focused attention on the possible use of the helicopter by the British and U. S. navies to combat submarines in zones which cannot be reached by land-based planes. Some reports erroneously interpreted Navy officials as saying such craft already were in use to drop bombs on submarines.

Lovette's Statement

To clarify the facts, *American Aviation* obtained the official statement of Capt. Leland P. Lovette, director of Naval public relations, in which he said that existence of a 500 to 600-mile gap in mid-Atlantic which cannot be covered in aerial reconnaissance by shore-based aircraft "means that ship-based aircraft or helicopters are best fitted to do this job." Additional facts were uncovered showing that plans for such combat use of the helicopter are still in a nebulous stage, and their widespread use cannot be expected in the near future.

Meanwhile, development and improvement was taking place along various lines. Three new patents on helicopter improvements, combining some helicopter and autogiro features, were assigned to the Autogiro Company of America at Willow Grove, Pa.

Stout Is Engineer

Recent applications by Northeast Airlines and others to the Civil Aeronautics Board for permits to operate helicopter mail and "taxi" service in the post-war era appeared certain to be followed by other applications, demonstrating the eagerness of the transport industry to begin utilizing craft with the possibilities offered by the helicopter.

Interest demonstrated by airframe manufacturers other than the original developers of the helicopter, the Vought-Sikorsky Aircraft Corp., subsidiary of United Aircraft Corp., was another indication of the place rotating-wing craft is beginning to command in the industry.

Woodhead's announcement of Consolidated Vultee plans was first made publicly in an address before the Miami, Fla., Chamber of Commerce, and presented only the bare disclosure that the com-

pany is working on its own version. Subsequently other Consolidated spokesmen declined to amplify the announcement, pointing out that the whole thing is still in its early stages.

Woodhead said the company's research staff is headed by William B. Stout, of the Stout Research Laboratories, which have become the research division of the aircraft company. "I think we can expect much from him as the war progresses," Woodhead said.

Kaiser Men At Work

Among other things in a long list of innovations and inventions, Stout developed the first cantilever wing monoplane flown in the U. S.; constructed the first Bat Wing type plane with the first enclosed cabin in 1919; built the first all-metal torpedo plane for the U. S. Navy in 1922; built the first all-metal commercial and first all-metal transport plane; assisted in developing the Ford tri-motor planes, and produced stainless steel aircraft in 1940.

Industry observers saw in the Consolidated Vultee announcement one of the most significant of recent aviation developments, and the fact that Consolidated considers its helicopter as a "post-war model" gives another indication of the length of time which can be expected before such crafts actually hit the market.

Disclosure of the Kaiser contract attracted the interest of the British Navy in helicopters and was accompanied by a statement from a Kaiser spokesman that the first two craft would be built within 90 days at Fleetwings' Inc., the aircraft plant at Bristol, Pa., which Kaiser took over early this year.

Announcement of the contract was made by Richard W. Seabury, president of Cargoes, Inc., who said that the British were anxious to obtain helicopters for



New Training Device: Undersecretary of War Robert P. Patterson, left, sees an AAF cadet using the latest training device at Southwest Airways' Thunderbird Field in Arizona. Flight Instructor Herb Wall, right, explains the use of the anti-ground loop trainer in decreasing accidents during take-offs and landings.

Maj. Johnson To Speak

Oklahoma's "minute men of the air" the active Civil Air Patrol, will hold their second statewide meeting in Tulsa on May 29 to discuss mutual problems and map future plans, according to Maj. Moss Patterson, CAP, state wing commander. Maj. Earle Johnson, AAF, national commander of the CAP, will be the principal speaker and members of his staff will attend. Arrangements at Tulsa are under the direction of Capt. Gerald Westby, commanding Group 823.

war use, and that his Lend-Lease subsidiary had determined to supply them if possible. He indicated that if they prove successful, plans will be mapped for large scale production.

It was reported that a staff of 50 Kaiser engineers are now working on the helicopters at Bristol and at Franklin Institute, Philadelphia. They are expected to be modeled after the Sikorsky craft.

In the wake of this announcement, press stories were widely circulated to the effect that the U. S. Navy already is using helicopters to combat submarines in mid-Atlantic and that the British have been using them for months. These reports were branded as erroneous by Navy spokesmen, in an interview with *American Aviation*.

The statement of Capt. Lovette in regard to such possible use was made in an address before the National Newspaper Promotion Association in New York City on April 20. He said:

May Bridge Gap

"The British Admiralty has recently made public some information to show where U-boats scored their biggest success. It was stated that despite the employment of long-range aircraft over the Atlantic, Catalinas and Flying Fortresses and Liberators, that the distances involved were so great that there was a 500 to 600-mile gap in mid-Atlantic that could not be covered in aerial reconnaissance by shore-based aircraft. It is very necessary that this gap be covered two or three hundred miles on each side of this strip. That, of course, means that ship-based aircraft or helicopters are best fitted to do this job."

Relative to the British situation, Capt. Lovette then presented the following quotation from the March 27 issue of the *London Illustrated News*:

Navy Denies Reports

"Designed by Igor Sikorsky, the world-famous engineer, the present version of the helicopter is the result of more than 30 years' work on the problem of direct-lift aircraft, begun in Russia in 1910 and continued in the United States. The helicopter works on different principles from those of the autogiro. Whereas the latter, having lifted itself by its rotor blades, relies on a normal power-driven propeller for flying forward, the helicopter does all its flying by means of the rotor, the angle of whose blades can be altered to fly the machine in any direction of the compass, as well as on a rising or descending angle.

"Control is facilitated by a variable-pitch airscrew at the tail, replacing the more normal ailerons, elevator and rudder. The helicopter has a speed range of anything from 0 mph to 100 mph, which, with its ability to rise from and land on

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Executive Order Transfers Civil Air Patrol to Army

BY Executive Order of President Roosevelt, the Civil Air Patrol was transferred from the Office of Civilian Defense on April 28. CAP by this move became a military rather than a civilian defense auxiliary but its personnel remains in a civilian status.

"It is our intention to continue to make use of the CAP in every field where the expense in men, money and materials is justified as a part of the overall war effort, including in that objective the importance of increasing the flying experience of a large number of civilians and stimulating and developing interest in aviation among all our citizens, particularly the younger men," Robert A. Lovett, Assistant Secretary of War for Air, declared.

Mr. Lovett spoke of the "very real contribution to national defense made by this national organization of civilian volunteers," and said the transfer was recognition of "a job well done." Although it was originally thought that the functions of the Patrol would be largely civilian, "actually," he emphasized, "from a very early stage in its existence a large part of its activities has been of a military character. With so large a part of its missions unconnected with those of OCD, the transfer to the War Department seemed logical."

Full agreement with the change was expressed by James M. Landis, OCD Director who believes the change will result in a "substantial increase in the already acknowledged military effectiveness of CAP." As an auxiliary of the Army Air Forces under direct control of the Commanding General, AAF, CAP will be able to obtain repair and replacement parts, as well as adequate safety and life-saving equipment, it is claimed.

The purchase of equipment has always been a major problem for CAP. As a civilian organization operating under a civilian agency it was never eligible to purchase materials or supplies from War Department depots. At the same time, military orders were absorbing virtually the entire production of airplane and equipment plants, so that source too was closed to civilian purchasers.

"We are proud of the fact that the decision to transfer CAP to the War Dept. was not because of anything CAP had failed to do," said Dean Landis, "but on the contrary, is recognition of the very real achievement of developing, in a little more than 17 months, an organization composed of more than 73,000 civilian volunteers, which is of such military value that the Army wants to make it a part of its own organization."

The record of CAP's varied activities is imperative. In its anti-submarine patrol work, over-water flights have totalled more than 16,000,000 miles. CAP has also operated for the Army a liaison patrol along the Mexican border, courier services for the Second Air Force in the Northwest and the First Air Force in the Northeast, as well as searches for lost planes or ground parties. It has patrolled

forests, levees, utility lines and war production areas; and carried out civilian defense observation and courier assignments. Its emergency squads rush vital replacement parts to war plants, blood plasma and medical supplies to stricken areas, drop food and equipment to marooned parties, and carry out extensive flood patrols.

The War Dept. has declared it will not make any changes in CAP's administrative and operating methods. It expects to use CAP planes as long as the supply of replacement parts does not divert critical materials from more immediate needs. An official release states that no reduction is anticipated in the extent of its anti-submarine patrol at the present time and its other military as well as some non-military activities will continue unchanged.

"The AAF anticipates no change in the tours of active service under which CAP has operated. These tours call for a three-months minimum of active duty on anti-submarine and southern frontier liaison patrol and a minimum of two weeks on courier and miscellaneous missions requested by the armed forces."

"Once they have embarked on a tour of

active service the members of the organization cannot be excused until properly relieved." But the AAF expects to continue CAP's flexible policy of honoring valid excuses for postponement of duty because of civil responsibilities and obligations.

The only major change effected by the transfer appears to be AAF's assumption of all administrative costs, formerly the responsibility of OCD. Per diem of pilots and costs of operation, maintenance and depreciation of planes for missions requested by the armed services have always been supplied by funds of the AAF.

The rate of \$8 per diem for CAP pilots and hourly allowances ranging from \$5 to \$56 for operation, maintenance and depreciation of their aircraft will continue. Size, horsepower and equipment of the planes determines the hourly allowances. Assistance of the AAF in operation and maintenance of CAP planes based at Air Forces installations will be continued. Non-military operations and services performed by CAP will continue to be paid for by the state or organization requesting the service.

Further recognition of the importance of CAP was seen in the announcement on May 5 that its members may continue to receive flight training for essential CAP activities under recently modified WPB Limitation Order L-262. Charles I. Stanton, Administrator of Civil Aeronautics, declared essential flight activities of CAP are included in the list of flying jobs which contribute to the war effort.



OWI Photos.

African Assembly: These new pictures from Africa show how American warplanes are speeded to the battlefronts. Top photo shows a crate containing a P-40 being backed into place alongside other crates at an African airport. In lower photo, the planes have been assembled, and are receiving final adjustments prior to taking off for the front.

March Production Up 11%: Officials Differ on '43 Total

March aircraft production figures gave a sharp spur to speculation about the total production picture for 1943. Government spokesmen's agreement that the output for March was 6,200 planes, scarcely 11% higher than the abbreviated preceding month, brought a welter of conflicting predictions as to the year's results.

Donald Nelson, in a war production resumé, cautioned that we must expect to see a slackening in the acceleration rate of producing new war equipment, including aircraft. As factors limiting the manufacturers' expectations, he pointed to the labor shortage, to the near-saturation point in steel production, and to the problems of scheduling, which of necessity occur and recur as scarcity and urgencies interrupt producers' plans.

Secretary of the Navy Frank Knox also inclined toward this conservative view. He had scarcely told his press conference on May 4 that combat planes delivered to the Navy had reached four figures for the first time, when he warned: "Don't assume this rate of increase is sure to continue." Once again the twin problems were cited for attention, material scarcities and a shortage of labor. The Secretary, for his summary statement, predicted, "a levelling off from now on."

No such stern deflation was served up to the public in remarks of Under Secretary of War Robert P. Patterson and Vice-Chairman William L. Batt of the War Production Board.

In a speech of Apr. 26, at Atlanta, Georgia, Mr. Patterson used the March production of 6,200 planes mainly as a springboard for the comment: "We can raise that number; we can produce twice that number of planes." Such a program for aircraft, he notes, will cut into production for "other branches of the service." But the under-secretary appears to be clearly of the opinion that plane production capacity is still far beyond the demands which the War has so far imposed.

Batt is an enthusiastic exponent of the same belief. There will be 100,000 planes from American plants in 1943, he claims. To punctuate this figure he marked out totals for the two preceding years, at a mere 19,000 in 1941 and about 48,000 in 1942.

Some synthesis of these diverging views is possible, in that the speakers were thinking with emphasis at different parts of the problem. For Nelson and Knox it was a case of minds troubled by what could happen to the present overall pattern of production when material and labor prove to be scarcer. On the other hand Mr. Patterson was looking toward a program which cast the airplane in a larger role, even perhaps at the expense of other services. Planes may become the favorite tool of war strategy. If that proves to be the case the most optimistic figure quoted for 1943 may not be any too great.

NEW WAFS UNITS: Three additional units of the Women's Auxiliary Ferrying Squadron have been established, the War Dept. announced. The WAFS now accepts as pilots only those recruits processed by the Women's Flying Training Detachment, which has been set up as an adjunct to the Flying Training Command of the Army Air Forces.

John Public Tells Navy How to Win the War in 10 Easy Lessons

In the postwar world every American will own his own plane equipped with a giant skyhook which can be lowered to catch on to his house. In this way the plane can be reeled in, eliminating the necessity for large landing fields in every garden.

This practical solution to one of the problems confronting every planner of the postwar air-age was submitted to the Navy Department's Bureau of Aeronautics. In the Bureau it was examined by the Experiments and Developments Section of the Engineering Research Department.

Thousands of letters pour into this section every day with new ideas for combat planes, transports, gliders, flying subs, and submerging planes. To this office come plans from leading producers and inventors, from teen-aged boys, from service men, scholars, mechanics and spinster school teachers. Every project is thoroughly examined by aeronautical engineers; every letter is carefully and fully answered.

One of the most exciting ideas to the average man appears to be that of dangling things from planes. It was suggested that metal plated ropes be hung from the bottom of all combat planes to catch in the enemy's propeller. "I tried it with my key chain in the car engine," said the confident inventor. "I haven't found the chain yet—and you should see the engine!"

Mattresses stretched between ships at sea for planes to land on, a giant saw-toothed knife projecting from the sides of planes to saw enemy aircraft in two are some of the less complicated suggestions received by Experiments and Developments. The man who suggested floating circus balloons filled with hydrogen over cities to form a barrage found a long letter in his mail box one morning. The letter thanked him for his thoughtfulness but pointed out it would take 47,000,000 balloons placed ten feet apart in each direction to fill one cubic mile of air.

Deluges of mail follow every announcement of crashes and searching parties, of new inventions or rumors of enemy achievements. When the announcement came that Navy fliers had spent 34 days on a raft in the Pacific, several hundred letters arrived detailing methods for catching fish with safety pins, belts, shoe laces and empty cans. Young boys are usually authoritative about the best methods for using a 16-inch gun on a plane.

The Section's files are full of models of impossible planes sent in by people who have no idea that years of research and testing are necessary to determine practicability of any new invention. Declares patient Captain L. C. Stevens, head of the section "The Navy is very interested in any and all possibilities which may advance the war effort. The only requirement it sets up is that proposals should have some chance of being practicable."

Rankin Leaves WPB to Join Australian Staff

Allen Clark Rankin, formerly special assistant to the director of WPB's Aircraft Production Division, joined the staff of the Australian War Procurement Supplies in Washington recently. His unofficial title is administrative assistant for aircraft.



Rankin

One of the first production experts to join the government, Rankin went to the National Defense Advisory Commission in 1941 as a senior business consultant to the aircraft section of the Production division. He went to NDAC with Merrill Meigs

from Hearst where they were both employed for some time. Rankin handled automotive advertising for the Hearst interests.

When NDAC became OPM, Rankin remained in the same position until WPB was formed and he became a special assistant. During the time Gen. Knudsen was turning the automotive industry to aircraft production, Mr. Rankin was active with industry men. Throughout the time he worked at WPB, industry officials sought his aid in expediting deliveries, priorities and production.

Burden Heads War Aviation Committee

William A. M. Burden, special aviation assistant to the Secretary of Commerce, has been named chairman of the War Aviation Committee, according to CAA announcement.

Other committee members are Robert A. Lovett, Assistant Secretary of War for Air; Artemus Gates, Assistant Secretary of the Navy for Air, and L. Welch Pogue, chairman of the Civil Aeronautics Board. Pogue has been named secretary of the group.

The committee was set up under procedure approved by President Roosevelt to consider important policy recommendations of the interdepartmental air traffic control board, and other recommendations on which the Board does not unanimously agree.

Gen. Branshaw Named

Brig. Gen. Charles E. Branshaw has been named commanding general of the Army Air Forces Materiel Command, Wright Field, O., the War Dept. has announced. He was formerly supervisor of the Western Air Corps Procurement District, Santa Monica, Cal., and prior to that assignment represented the AAF at the Douglas Aircraft Co. plant there. Gen. Branshaw has been engineering officer at Brooks Field, and chief engineering officer at the San Antonio Air Depot, both in Texas.

SHIPS PASSING... *day and night*

Today... tonight... huge cargo ships of the Air Transport Command are swiftly spanning oceans and continents on missions which are shaping the course of the war. Some are speeding urgently needed battle supplies and equipment; others are flying technicians, scientists, generals, to crucial fronts... to Africa, Australia, Asia, the South Pacific, Alaska.

Curtiss Commandos... the world's largest twin-engined transports... are a vital part of this

history-making aerial fleet. They carry the goods of war today, but in the peacetime era of tomorrow they will help to revolutionize world commerce by shrinking global trade routes from weeks to days, from days to hours.

CURTISS-WRIGHT
Corporation
AIRPLANE DIVISION



CURTISS *Commandos*

TRANSPORTING THE GOODS OF WAR



Airacobras Strafing Jap Air Base

SUDDEN DEATH...made in U. S. A.

They asked for it.

Axis gangsters took the miracle of aviation and made it a weapon of destruction. They bred their birds of prey, unleashed them—

Now they hear a tougher breed roaring overhead. Army Airacobras, made at Bell Aircraft, bringing sudden death.

In three years—starting from scratch—we Americans created the largest aircraft industry in all the world.

Spotting our enemies ten years we are already outbuilding them. This is a record we can all take pride in.

★ ★ ★

When the world's skylanes are made safe for peaceful travel and commerce, the aircraft industry promises you planes advanced almost beyond imagination.

We men and women who designed, engineered and built the cannon bearing Airacobra, will be ready for an important assignment. © Bell Aircraft Corporation, Buffalo, New York.

Airacobras for victory—
FUTURE PLANES FOR PEACE
BELL *Aircraft*

PACEMAKER OF AVIATION PROGRESS

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First Details on Development of Radar Told by Army, Navy

Early development of radar, one of the most closely guarded secrets of the war, was described recently in a joint announcement issued by the War and Navy departments in which it was pointed out that only such information as would not endanger Allied forces or help the enemy can now be revealed. This statement presented the following outline:

"The term 'Radar' means radio-detecting-and-ranging. Radars, then, are devices which the Allies use to detect the approach of enemy aircraft and ships, and to determine the distance (range) to the enemies' forces. Radar is used by static ground defenses to provide data for anti-aircraft guns for use in smashing Axis planes through cloud cover, and by airplanes and warships.

"It is one of the marvels made possible by the electron tube. Ultra high-frequency waves traveling with the speed of light can be focussed, scan the air and sea. When they strike an enemy ship or airplane, they bounce back. Radio waves travel at a constant speed of 186,000 miles per second. Thus a small space of time is required for such signals to travel to a reflecting surface and return to a receiver, so that, with means provided for measuring this time interval, it is possible to determine the distance to a given target. Radars operate through fog, storms, and darkness, as well as through cloudless skies. They are, therefore, superior to both telescopes and acoustic listening devices.

Defense and Offense

"Radar is used for both defense and offense. In fact, the British, who call their similar apparatus the radio locator, say it was instrumental in saving England during the aerial blitz of 1940 and 1941. At that time the locators spotted German raiders long before they reached a target area, and thus gave the RAF and ground defenses time for preparation. Since then Radar has stood guard at many danger points along United Nations frontiers and at sea, warning of the coming of aerial and sea-borne enemy forces, and contributing towards victory in combat. The new science has played a vital part in helping first to stem and then to turn the tide of Axis conquest.

"It was first discovered in the United States in 1922, when scientists observed that reception from a radio station was interfered with by an object moving in the path of the signals. Accordingly, a radio receiver was set up on the banks of a river and the effects of signal reception caused by boats passing up and down the river were studied. The experiment of installing the receiver in a truck was also tried, and it was observed that similar disturbances were produced in the receiver when the truck moved past large buildings. Development work was immediately undertaken so that the new discovery might be used for detecting vessels passing between harbor entrances, or between ships at sea.

"So far, it had been necessary to have the moving object pass between the radio transmitter and the receiver. This obviously limited the possible fields of ap-

plication. In 1925 it was found that the surface of an object, or target, would act as a reflector of high frequency radio waves. In other words, the radio signals sent out by a transmitter could be made to strike a target, and then 'bounce' back to a receiver. This made it possible to have both the transmitter and the receiver at the same location.

"By 1930, research engineers were able to pick up reflected signals from planes passing overhead. By 1934, they had developed a satisfactory means of measuring the distance between the radar transmitter and the target. Since then other advances in the field have been made, some of which, after the war is over, will undoubtedly contribute to the security and comfort of a world at peace.

Guarded From Enemy

"In order to prevent information which might facilitate development of radar from reaching the enemy through publicity originating in the United States, it has been decided that no further items on the subject will be released until the Army and Navy are convinced that the enemy already has the information from some other source."

Effective as of May 1, the War Production Board issued the following order announcing that deliveries of radio and radar test equipment will be made in accordance with schedules determined under M-293 instead of preference ratings.

"Buyers of test equipment will fill in Form 556, on the basis of which the placement and delivery of new orders will be determined. These forms, available at WPB regional offices, will be submitted to the WPB Radio and Radar Division for approval, and the approved forms will be attached to purchase orders.

"While it is expected that buyers no longer will be able to trump each others bids for equipment with triple A ratings, they will be able, under restrictions, to obtain directives for prompt delivery. However, requests for such directives will be scrutinized more closely, leading to a swift reduction in the number of them in force."

Elmer Crane, chief of the Components section, said that while deliveries of test equipment no longer would be subject to the competition of priority ratings, production would continue to be expedited by the use of ratings to purchase components and materials. Since supplies of these components, consisting of resistors, condensers and other equipment, are not as tight as those of test apparatus, schedules of the component producers will not be upset.

Since test equipment purchase orders hereafter are to carry WPB approval on Form 556, manufacturers receiving purchase orders without such approval should return them to their customers, it was stated. "Jobbers, like manufacturers, are to see to it that their customers receive approval on Form 556, and that the approved form is sent with the purchase order to the producer."

Fighter Plane With Bullet Hole in its Valve Keeps Flying

A Wright Cyclone engine exhaust valve with a quarter-inch bullet hole through the valve stem which should have broken instantly and wrecked both engine and plane but which functioned perfectly for 110 flight hours, has been received from the Orient by Wright Aeronautical Corp. of Paterson, N. J., builders of the engine. The valve was manufactured by Thompson Products, Inc.

According to a British flying unit operating the Wright Cyclone in an American-built Curtiss Mohawk (75-A) fighter in the Far East, the hole through the slender stem of the valve was discovered when the engine was removed for overhaul at the end of 180 hours flight time. The fighter plane's log showed it had been in a dogfight at 70 hours of flight, at which time one of the nine cylinders was so bullet-ridden it had to be replaced.

The remaining cylinders, including the one with the damaged valve, had apparently been intact and were not touched by mechanics. Examination at the 180-hour overhaul, however, showed where the bullet had entered and also that it evidently had been thrown out through the exhaust. Experts decided the bullet was probably of the steel-jacketed, high-velocity type.

"Ordinarily," commented Myron B. Gordon, vice-president and general manager of Wright Aeronautical Corporation, "a valve with the sodium shot out of it should burn and cause trouble, or the jagged edges around the bullet's exit point should have spread into wide cracks and caused the valve to break." The bullet-pierced valve was of the sodium type, the head and part of the stem being filled with sodium which melts at operating temperatures then surges back and forth with the valve action to carry heat away from the head and outwards through the stem. All the sodium had run out through the bullet hole.

"The fact that the valve kept on working indicates the quality of materials used in American engines and also indicates how much punishment the air-cooled radial engine can withstand," Gordon remarked.



Stout Valve: Myron B. Gordon of Wright Aeronautical Corp. is shown pointing to bullet hole in a valve stem from a Cyclone engine which kept on flying for 110 hours after sustaining this "wound."



Facts About AIR PRIORITIES

Q. What is Air Priority?

A. Air Priority establishes the precedence of movements of air passengers and air cargo on commercial air carriers.

Q. What is its purpose?

A. To assure that space on air carriers is made available when required for the national war effort.

Q. To whom and for what are Air Priorities granted?

A. (1) Personnel engaged in essential war work, including members of the armed forces, other employees of the government, representatives of allied governments and civilian personnel.
(2) Essential war materials.

Q. When will Air Priority be granted?

A. Priority will be granted only when the movement of the passengers or cargo is necessary to the prosecution of the war, and when the mission of the passenger or the need for the cargo is of such urgency that transportation by air is necessary.

Q. How are Air Priorities granted?

A. By the issuance of a Priority Certificate by the Headquarters or Regional Offices of the Air Priority Division, Air Transport Command, Army Air Forces.

Q. To whom should requests for Priority Certificates be made?

A. To the Army or Navy officers assigned as Plant Resident Inspectors, Engineers or Representatives at production plants or on construction projects, or, at plants or projects on which no officers are assigned, directly to Headquarters, Air Priorities Division, or the nearest Regional Office. For complete addresses, see Braniff Airways booklet, "Revised Air Transport Priorities."

Q. After a Priority Certificate for passenger travel is obtained, how is a reservation made?

A. Headquarters and Regional offices, Air Priorities Division, will not make actual reservation for air transportation. Reservations will be made in the usual manner direct with the airlines themselves.

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Just printed by Braniff Airways. Stop at any Braniff Ticket Office for a copy, or phone or write and a copy will be mailed to you.



Q. May civilians who have not been granted a Priority Certificate make reservations and travel by air?

A. Yes, definitely. Civilians and members of the armed forces who do not hold Priority Certificates are not prohibited from using the airlines. Persons traveling without priority may be asked to give up their seats for passengers holding such priority certificates. However, air travel still expedites the trips of non-priority passengers because in many instances their travel will be undisturbed, and in others the use of air travel for a portion of the trip speeds up the total trip. For example, a Chicago-Dallas passenger who is deplaned for a priority passenger or cargo at Kansas City will have gained nearly 10 hours on his entire trip by having flown between Chicago and Kansas City.



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Serving Chicago, Kansas City, Wichita, Oklahoma City, Dallas-Fort Worth, Amarillo, Wichita Falls, Austin, San Antonio, Houston, Corpus Christi, Brownsville, with connections to Mexico, Central and South America.

TO INSURE FREEDOM — BUY MORE WAR BONDS



Easy does it

One of the most important jobs at Boeing is making other Boeing jobs easier . . . simplifying procedures so that, despite shortages of skilled workers, production constantly goes upward.

Above is pictured an example of this easy-does-it manufacturing philosophy—a simple device, but it illustrates the point: the Boeing-developed wheel-installation dolly, by means of which one worker slips quarter-ton wheels onto the axles of Boeing Flying Fortresses.* The wheel, held firmly on the dolly by adjustable arms, is rolled into position

on casters. Once the wheel is slipped over the landing-gear axle, the arms of the dolly are moved back . . . and the job is done.

This is but a simple example, and only one among hundreds, of the constant effort in Boeing plants (at Seattle and Renton, Washington, Wichita, Kansas, and Vancouver, B. C.) to achieve maximum production efficiency with a minimum of human exertion, through improved tools and handling equipment . . . an effort which has contributed to the highest output per man, machine

and unit of plant space, among all manufacturers of aircraft.

Co-ordinated with Boeing know-how in research, design and more than twenty-five different engineering fields, this manufacturing skill has made Boeing-designed and Boeing-built Flying Fortresses renowned not only for quality but for quantity.

And in the peacetime to come, these same skills will make the phrase "Built by Boeing" a hall-mark of skilfully designed, soundly engineered, efficiently manufactured products.

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS

BOEING

*THE TERMS "FLYING FORTRESS" AND "STRATOLINER" ARE REGISTERED BOEING TRADE-MARKS

Daylight Bombing is Effective, Foster says

High commands of the British Royal Air Force and the U. S. Army Air Forces are now in complete accord regarding the effectiveness of American daylight precision bombing over Europe as a complement to the night sweeps of the RAF, according to Air Vice Marshal W. F. MacNeece Foster, acting head of the Royal Air Force delegation in Washington.

The air vice marshal who headed an RAF bomber command before coming to Washington and who flew with American and Canadian pilots in operational aircraft while they were undergoing training in England, made this declaration in a recent address before the Canadian Club of New York.

"The one great need for an effective air offensive by day over Germany," he declared, "is more aircraft. I know that this fact is equally appreciated in both Washington and London."

After discussing the differences in views held by the high commands of the air forces a few months ago, he said that "a striking change" has come over the viewpoints of both services as a result of actual operational experience. He said in part:

"There have been certain doubts expressed in the United States as to the ability of day bombers to function effectively over Germany and occupied Europe. It is desirable to say that the Air Ministry, having studied results of recent operations with the greatest care, do not share these doubts.

"They are convinced that:

"(1) Sufficient experience has now been accumulated to show that the expectations of the U. S. Army Air Forces in England have been justified. They have carried out heavy and accurate attacks against strongly defended targets in the occupied territories and in Germany and they have returned without undue loss;

"(2) The ideal combination for striking a decisive blow on Germany's power to wage war is by the combination of day and night bombing;

"(3) Recent raids have shown that in both day and night bombing a far higher proportion of results are achieved by an attack of strong forces as opposed to smaller forces. In other words, the results of an attack of 200 aircraft over a single objective are much more than twice a similar attack by 100 aircraft. This remark is even more true with regard to 400 and 200 aircraft.

"The reasons are quite obvious. The defense becomes saturated and the communications chaotic, and all means of combatting the invader from without or the damage from within are strained to the uttermost.

"To take a simple illustration, it is evident that it is at least ten times as difficult to extinguish five great fires in a big industrial center as to extinguish one single fire.

"To sum up, the Air Staff conception of the night and day bombing of Germany is that they are both essential and complementary; and that if carried out on the necessary scale, they are capable of producing decisive results which may well greatly shorten the war in Europe, with all the consequences that would follow, enabling us both to turn our full weight on Japan.

"From an airman's standpoint, it is safe

The Caterpillar Club Is Now Official

Organization of the mythical "Caterpillar Club" into a permanent, active body was announced recently by Stanley Switlik, partner in the Switlik Parachute Co., Trenton, N. J. The club is made up of flyers who owe their lives to emergency jumps from disabled aircraft.

The organization move was sponsored because of the greatly increased numbers who have qualified for membership. Permanent headquarters soon will be set up and charters issued to local and state groups, Switlik said. He revealed that the name "Caterpillar Club" originated because the spectacle of a flyer opening his parachute was likened to a caterpillar "emerging from its cocoon as a moth to fly away to safety."

Many famous flyers, including Maj. Gen. James H. Doolittle, Maj. Gen. O. D. Hunter, and Charles A. Lindbergh, have qualified as "caterpillars," Switlik added.

to say that no experiment has ever been watched by the Royal Air Force with greater keenness and a greater desire for its success. For none knew better than they that daylight precision bombing was the looked-for and natural complement of night bombing. It offered immense possibilities, not only for adding to the systematic bombing of strategic targets but for the further attrition and exhaustion of the German air force.

"Civilian observers in both countries have sometimes misunderstood the real nature of the problem which confronts the American Air Force and the R.A.F. It was not, as some suppose, the question of whether daylight precision bombing was better than night bombing. The real question was whether they could both be effectively undertaken under the conditions obtaining in the European theater; and recent experience has shown that this question can now assuredly be answered."



Good Neighbor: Senora Pinheiro Machado, first woman airplane pilot of Brazil and holder of the women's altitude record of 14,000 feet, is shown arriving at Pan American Field, Miami, for an inspection tour of U. S. civilian aviation activities as guest of CAA and Coordinator of Inter-American Affairs. She also will take a post-graduate course in blind and instrument flying. Shown with her is Capt. William Moscoso, Jr., U. S., AAF.

AAF African Losses Average 1 Per Cent

A United States Army Air Forces Heavy Bombardment Group lost an average of less than 1% of its planes per mission in helping rout Marshal Rommel's troops from the Middle East, Col. Hugo P. Rush, Air Corps, has reported to the War Department.

"The targets included Tobruk, Benghazi, Tripoli, Sfax, Sousse, Tunis, Palermo, Messina, Naples, Navarino Bay, and many other coastal towns and shipping installations in Italy," he said.

Colonel Rush said most of his group's missions were made over great distances. High altitude precision bombing was carried out with success on most of its missions.

"Each mission averaged 10 hours flying time," he said. "One youthful pilot rolled up 25 missions which totaled 250 hours, and many of his trips were taken under adverse flying conditions. The initial attacks against Rommel's supply lines extended a distance of 2,000 miles from the Army Air Forces base to the target. Consolidated B-24 four motored Liberators were flown almost exclusively by our group."

2nd CAA Inter-American Training Program Begins

Fifty young men from the Latin-American republics will be brought to the United States for training as pilots, and 75 will be schooled in aircraft and engine mechanics as part of the Civil Aeronautics Administration's second Inter-American aviation training program, the CAA announced recently.

The pilot training program will start May 1 at North Aviation Co., White Bear Lake, Minn. The first of four groups will begin an eight-weeks' course, and others thereafter every eight weeks. The mechanics will be trained at the Casey Jones School of Aeronautics, Newark, N. J., in three groups, starting May 3, at six-week intervals. Both the Minnesota and New Jersey locations were previous Inter-American training grounds.

The pilots will take a series of five courses lasting about 40 weeks. This will qualify them for commercial pilot's licenses, with instrument and instructor ratings. The mechanics course will provide 2,000 hours of instruction over a 50-week period, covering material required to obtain the standard CAA certificate for aircraft and engine mechanics.

The trainees have been chosen by selection boards composed of officials from both their own countries and the United States. They range in age from 21 to 32. The prospective pilots are college graduates with a working knowledge of English. Additional instruction in English during their elementary and secondary flight courses, however, will help them talk fluently over the radio-telephone during the cross-country flight stage. Mechanic trainees are required to have two years of high school, or the equivalent in experience, the CAA announced.

The Defense Supplies Corporation is bearing the expense of the Inter-American training programs, with the State Department and the Coordinator of Inter-American Affairs cooperating in making arrangements.



America's Oil and American Victory!



AS far as we know, the best aviation gasoline the enemy can produce in quantity is 91-octane gasoline.

American combat planes fly with 100-octane gasoline. That means that gallon for gallon they have a potential power advantage of about 20 per cent.

This didn't happen just because we have more petroleum than the enemy. Our pilots fly with 100-octane gasoline because America's Petroleum Industry knows how to make better use of petroleum than the enemy does.

In a never-ending peacetime hunt to get better products from petroleum... we in the Esso Research Laboratories pioneered in the development of 100-octane gasoline.

Because of this same research...our boys today have special lubricants as dependable on Russia's coldest steppe as over Libya's most torrid dunes or the Solomons' sweltering jungles. And special hydraulic oils for operating controls in planes and guns in temperatures where the ordinary product would freeze and lock the equipment into uselessness.

Because of this same mastery of petroleum science

...our flyers are getting synthetic rubber that, for specialized uses, surpasses the real thing.

Because of this work...our country can make all the TNT we need to beat the Axis...and the important ingredient—Toluol—is now being made from petroleum.

The whole list of such products developed over the years by continuing Esso research helps to explain why the United States, in peace or war, has done more than any nation on earth to make oil the servant of man.





ANSWERING THE NEED FOR...



Trained Air Men!

IN a war demanding overwhelming air supremacy, the need is for men better trained than any the enemy can send into the sky.

The United Nations have an answer to that need in the immense British Commonwealth Air Training Plan centered in Canada.

To this great undertaking Canadian Pacific Air Lines is making a direct and constant contribution. The company operates, on a non-profit basis, six Air Observer Schools and a steady stream of British Commonwealth airmen is advancing daily through these navigation schools to emerge full-fledged flyers.

Another major war task of the company is the management and operation of five Aircraft and Engine Overhaul Plants under contract to the Department of Munitions and Supply for the servicing and repair of Royal Canadian Air Force equipment.

Back in 1940 the Canadian Pacific made another vital contribution to the United Nations war air effort by pioneering the Atlantic ferry bomber service, now the R.A.F. Ferry Command.

Thus does Canadian Pacific Air Lines serve the war needs of today. Tomorrow, when victory is won, the system will be ready to meet the transportation needs of a new, air-minded generation.

Canadian Pacific
AIR LINES

The Wings of the World's Greatest Travel System

Repair Plants Keep 'em flying, too!



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Gen. Andrews' Death Takes Key European Command From AAF

The death last week of Lieut. Gen. Frank M. Andrews, 59, one of the most hard-hitting airmen of all time, distinguished flying general and commander of all United States forces in the European theatre of operations, brought keen dismay to the nation, and to airmen in particular.

An enthusiastic airman since early in his career and one of the strongest advocates of a powerful Army air arm, Gen. Andrews had been the spearhead of the steadily increasing AAF air offensive.

Within a week, the swift reorganization necessitated by war conditions had seen him succeeded by Lieut. Gen. Jacob L. Devers, chief of the armored force—thus taking top command of the European operations out of the Air Forces.

However, another airman, Maj. Gen. Idwal H. Edwards, stepped into the post of Acting Chief of Staff simultaneously with Gen. Devers' appointment.

Gen. Edwards succeeded Brig. Gen. Charles H. Barth who was killed in the same accident with Gen. Andrews which also cost the lives of eight other officers and Bishop Adna Wright Leonard of the Methodist Episcopal Church, chairman general of the Commission of U. S. Army and Navy chaplains, all of whom were on the final leg of an inspection tour of all bases under Gen. Andrews' command. Their plane, reported to be a B-24 Liberator, crashed in an isolated section of Iceland on May 3.

Gen. Edwards, who now becomes one of the key airmen in the European theatre, is 48 and is recognized as an outstanding air officer with extensive experience in military aviation. He served in the air force in the Philippines in 1920, later in the office of Chief of the Air Staff in Washington, and in Hawaii from 1935 to 1937. He was named commander of Randolph Field in 1940, and early in 1942 became a brigadier general and assistant Chief of Staff in the European theatre.

Gen. Andrews was appointed commander of the U. S. Forces last Feb. 5, succeeding Gen. Dwight D. Eisenhower, and the action was hailed as a recognition of the importance of airpower.

His air career dated back to 1917 when he transferred from the cavalry to the aviation section of the Signal Corps. Rising to the rank of lieutenant colonel, he served during World War I in the Air Division at Washington and in command of Rockwell Field, Cal., and other air stations.

He earned his pilot's wings at the age of 34, and had to his credit 5,812 hours of flying, with only 173 of them as an observer. Whenever possible, he piloted his own plane.

It was partly as a result of his efforts that Flying Fortresses were developed. He began urging giant fleets of four-motored bombers as far back as 1935. In taking over the European command, he said, "My first job is to increase and intensify the bombing of the enemy." As early as 1937 he had warned that planes would be able to fly the oceans for direct attack, and predicted such flights within five years.

With the reorganization of the Army Air Corps in 1934-35, he received the

War Agencies Review

WPB

CURRENT SUPPLY OF STEEL IS LESS THAN THE DEMAND requiring cut-backs in some war production, as well as prohibiting any increase in production of consumer goods, H. G. Batcheller, director of the Steel Division reported. Claimant agencies have placed requirements for third quarter at 21,000,000 tons, while the steel industry is scheduled to produce only 15,000,000. Tentative plans include cutting Army's request for carbon steel by about 14%, Navy by 20%, Maritime Commission 22%, Lend-Lease 32% and Office of Defense Transportation by 40%. On other hand, report states "New production records are being made in alloy steel, with 1,264,679 net tons produced in March."

One-and-a-quarter billion of the more than 1,900,000,000 in aircraft contracts in WPB's Region III, comprising Eastern Pennsylvania, Southern New Jersey, Delaware, Maryland and Virginia, are concentrated in Maryland, a regional production review states. "With more than 85% of Maryland's industrial production located within a 35-mile radius of Baltimore, an acute housing, labor and transportation problem exists . . . with an estimated demand for more than 75,000 additional workers this year, Baltimore is scraping the bottom of its manpower barrel."

A continuing demand for materials outrunning the available supply was reflected in the third quarter allotments of Controlled Materials just completed by the Requirements Committee, Donald Nelson reported.

Terms of the separation of the Smaller War Plants Division from WPB and an outline of functions to be performed by both groups in the field were issued. "The responsibilities of WPB and the Smaller War Plants Corporation in the field offices will be divided upon the broad principle that WPB will center its activities on production and servicing in all its phases, whereas the Smaller War Plants Corp., will concentrate its activities on location of distressed plants and procurement of business for smaller plants and business concerns, and the corollary services which normally go with such functions."

With the objective of establishing a parallel relationship between the conservation of materials and the conservation in end-product manufacturing operations, the Conservation Division of WPB has been divided into two primary branches: materials and products. However, this does not change the operational functions. The three main functions: materials substitution, products specifications and product simplification remain as the primary operating objectives of the division and will be projected across the two major branches.

WMC

"PRODUCTION OF AIRCRAFT IS RAPIDLY BECOMING A WOMAN'S INDUSTRY," WMC Chairman Paul V. McNutt told pressmen, explaining the 70 to 80% of the workers now being hired by aircraft companies are women. He stated that employment figures made available by the aircraft industry showed that about one third of all workers in aircraft are women and that this proportion is expected to rise to at least 50% by the end of the year.

A full 48-hour work week by July 1 was assured more than 325,000 steel workers as result of order issued by McNutt. Question has arisen regarding his authority to issue such a directive.

WMC is considering a nationwide employment stabilization plan to meet labor's objections to the recent job-freezing regulation, WMC officials disclose.

Directing employers to file with Selective Service local boards written evidence of their employment of registrants who maintain bona fide homes with children less than 18 years of age, the Board sent out a memorandum relating to filing calls:

"Insofar as possible, men who are finally classified in Class I-A, men fit for military service; Class I-A-O, men fit for noncombatant service in the armed forces; or Class IV-E, men fit for work of national importance, who are available for induction or assignment to work of national importance, should be called for induction or assignment to work of national importance from the following groups in the order listed: (1) single men with no dependents, (2) single men with collateral dependents, (3) married men with wives only, and (4) men with children."

Dept. of Commerce

BY FAR THE GREATEST INCREASE in freight traffic in 1942 occurred in air transport, which gained 72% over 1941, the Department of Commerce advised. "This was largely the result of sharp increases in air pound-miles. The upward trend continued into 1943, with first quarter ton-miles showing an increase of 80% over the same period in 1942. Present indications point to an increase of about 50% over the 1942 record."

Dept. of Labor

APPROXIMATELY 38,000 KEY SUPERVISORS have been trained to carry responsibility for the safety and health of war workers and 17,000 additional will be trained to meet expected demands by July 1944, Secretary of Labor Perkins reported.

"Plans now being developed will enable selected graduates in turn in their own plants to instruct in basic safety techniques foremen, assistant foremen and leadmen, who will then give on-the-job safety instruction to some 12,500,000 workers providing a basic approach to the industrial accident problem," she said in reporting to the Planning Panel made up of leaders of labor and management and Government officials.

The National Labor Relations Act affords no protection to employees who strike, or threaten to strike, over the employment or upgrading of Negro workers in industrial plants, an NLRB trial examiner ruled.

Lend-Lease

"AIRCRAFT CONTINUE TO MAKE UP THE LARGEST single category of all lend-lease transfers, totalling \$1,405,744,000 to April 1," Edward R. Stettinius, Jr., Administrator, reported "Lend-Lease and direct purchase shipments of combat planes to our Allies have been about 1/3 of our total plane production. More Lend-Lease planes have been shipped to the Soviet Union than to any other theatre."

command of the General Headquarters Air Force with the rank of temporary brigadier general, later major general. He constantly advocated a strong air force.

In March, Gen. Andrews and Maj.

Gen. Ira C. Eaker, chief of the U. S. 8th Air Force in Britain, received the personal congratulations of Prime Minister Winston Churchill after the successful American bombing raid on the German submarine yards at Vegesack.

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Helicopters

(Continued from page 16)

a confined space on the deck of a merchantman—or, for that matter, on the sea itself—will make it an enemy greatly to be dreaded by U-boat crews. Not only can it follow the evolutions of a submarine more quickly than a submarine can complete them, but is able to 'dodge' gunfire by reason of its amazing maneuverability; among its other capabilities, for instance, it is able to stop its forward travel more quickly than a car can be braked. Additionally, it can drop bombs or depth-charges with 100% accuracy."

Capt. Lovette made no claim that the British actually are using the helicopter at the present time.

Spokesmen for the U. S. Navy Department revealed that the Navy is not now buying any helicopters, or even experimenting with them. Although the Navy is definitely interested in these craft as a possible war weapon, they said, it considers the helicopter at present an "Army show" and believes that experimentation at this stage by the Navy would be an unjustified duplication of effort. The question of available production facilities and allocation of materials to a production program also was raised, and Navy spokesmen said sentiment now is that active experimentation should be left in the hands of the Army.

These spokesmen said further that the helicopter does not at present appear utilitarian from a military standpoint, in that it cannot carry a heavy load and its performance has been untested in heavy weather such as that encountered frequently for long periods in mid-ocean. They said an analysis of the recently-revealed flight of Sikorsky's experimental craft from Connecticut to Dayton, O., failed to bear out hopes for immediate utilitarian use, in that it made 16 stops on a 760-mile trip, that the maximum in the air at one time was one hour and 50 minutes, and the craft was forced to sit out a windstorm.

At a press conference on May 4, Secretary of the Navy Knox confirmed this line of reasoning with a statement that the problem of utilizing helicopters to combat submarines has not been solved. "They are still in the experimental stage," he said. "They are difficult to control, cannot carry much weight and are not fast enough to maneuver in stormy weather. It is also hard to land them on a ship at sea in rough weather." Knox confirmed the view that experimentation should be left in the hands of the Army, but added that the intention is to put them on merchant ships, not on aircraft carriers.

In contrast to the military view was an optimistic forecast made recently by Igor Sikorsky before the Society of Automotive Engineers. He asserted that millions of helicopters may be in use in the decade following the war, that speeds of 120 to 140 miles per hour are possible and helicopter buses seating 12 to 20 people are "not beyond expectation."

Of interest to the industry were three new patents granted last fortnight by the U. S. patent office for improvements in helicopters. These were patents No. 2,317,340 to 2,317,342 inclusive. The first two were granted to J. A. J. Bennett of Esher, England, and the other to Cyril G. Pullin, Genista, Scotland, both of

Speed Records Fall As Trans-Atlantic Deliveries Increase

Trans-Atlantic speed records are dropping.

Recently it was revealed that Capt. William S. May of Winnipeg, a British Overseas Airways ferry service pilot, had flown a Liberator plane, 2,200 miles from Newfoundland to a British landfall in six hours and 20 minutes. He flew on to a British airport, registering seven hours and 40 minutes from take-off to landing. This clipped 21 minutes off the previous best time made 14 months ago. The plane carried a maximum load of 25 tons.

Several days later Capt. G. R. (Sam) Buxton, another British ferry pilot, flew a fully loaded Liberator from Newfoundland to Britain in six hours, 12 minutes—clipping eight minutes off Capt. May's mark.

Another notable record just revealed was a flight by Capt. E. R. B. White on June 10, 1941 from Lancashire to Quebec in 13 hours, 30 minutes, a distance of 3,100 miles.

which were assigned to Autogiro Company of America.

Both attempt to overcome the tendency of the helicopter to slew around due to torque of the rotor, and both use ordinary horizontal airplane propellers powered from the same engine that runs the rotor. Pullin's design uses one prop, offset, while Bennett's calls for two. In the latter craft, the power can be cut off from the rotor, converting it from helicopter to autogiro while in the air.

Information from reliable aviation observers abroad is that there is no known work on helicopters now going on in the European countries.

Last week the U. S. Patent Office also revealed that two significant patents had been granted to Igor Sikorsky for improvements to his helicopter, both of which were assigned to United Aircraft Corp.

One of these (Patent 2,318,260) features a pair of auxiliary sustaining rotors and a third auxiliary rotor. The technical description gave the following data: "In a direct lift type aircraft having an engine-driven main sustaining rotor so disposed that its axis passes adjacent to the combined center of gravity of said aircraft, a pair of auxiliary sustaining rotors spaced from said main rotor on the opposite side of said center of gravity and symmetrically located relative to the longitudinal center line of said aircraft, a third auxiliary rotor having a plane of rotation intersecting the planes of rotation of said sustaining rotors, and independently operable means for controlling the thrust effect of said main rotor, said pair of auxiliary sustaining rotors, and said third auxiliary rotor and mechanism operatively connected with and movable by said main rotor controlling means for varying the power output of said engine as said main rotor controlling means is moved to change the thrust effect of said main sustaining rotor."

Sikorsky's other patent (No. 2,318,259) covers a manually operated mechanism permanently connected with the main rotor for varying the pitch of the rotor and at the same time varying the power output of the engine.

Domestic Transportation Division of ATC is Moved

The newly constituted Domestic Transportation Division of the Air Forces Air Transport Command was moved from Washington to New York City early in May and is now in operation at 33 Pine Street.



Harris

The transfer affected about 200 officers and enlisted and civilian Air Force personnel formerly on duty in Washington.

Under the command of Col. Harold R. Harris, former Air Corps test pilot and airline executive, the Domestic Transportation Division

conducts the air transportation of United States military cargoes and personnel within the U. S., Mexico and Central America. It also has charge of the transition transport training program, supervising the domestic contract operations of the commercial air carriers now under contract to the War Department.

Headquarters of the Air Transport Command will remain in Washington.

Army Studies Formation of Negro Bombing Group

The possibilities of training a Negro bombing squadron is now being studied by the War Dept., Sen. James Mead (D, N. Y.) told the Senate recently on information given him by Under Secretary of War Patterson.

Pointing out that the present war is the first time in history that Negroes have been taken into the Army's air arm, Mead said that "Negroes are already being trained throughout virtually the entire technical training command of the Air Force, as well as at the Air Force Officers' Training School at Miami, Fla."

Negroes are admitted to the AAF in 10% ratio to white candidates, which is the same ratio that applies to the Army in general, and is the ratio of Negro to white population in the U. S., according to Patterson.

"So far Negroes are being given the opportunity for training on single engine pursuit ships", Mead said, adding:

"It was believed wise to start by training a fighter group, where only one airman per plane is involved, namely the pilot. To train a heavy bomber group, it is necessary to train in addition to the pilot a navigator, a bombardier, an aerial gunner, a radio operator, an additional mechanic and several other technicians. Because of the technical and other features present in flying, it was decided to proceed toward the formation of more complicated units after having gained experience with the simpler units."

Kallis Joins Southwest

Felex Kallis, formerly of Bell Aircraft Corp., has joined Southwest Airways, Phoenix, Ariz., as Chief Aeronautical Engineer, serving the company's four fields: Thunderbird, Thunderbird II, Falcon, and Sky Harbor.

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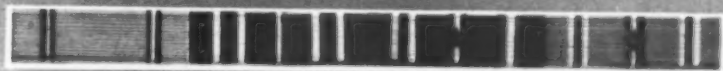
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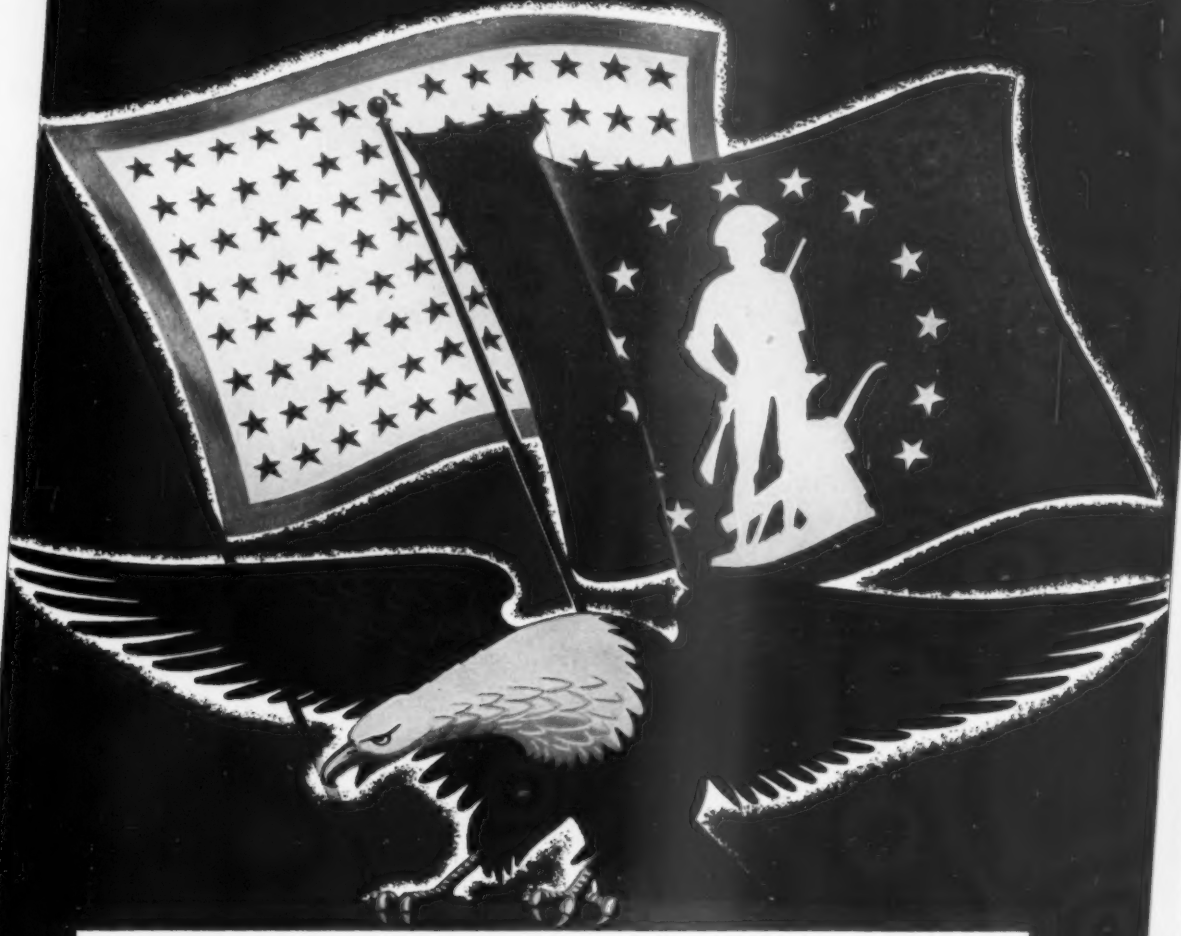
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Hearings Expected to Aid Aviation Gas Program

By KATHERINE E. JOHNSON

A PUBLIC protest by Under Secretary of War Robert Patterson that unless "drastic measures" are taken to increase supplies of aviation gasoline the "full effectiveness of our planned air strength would be reduced" was the shot which started Washington's most recent production battle—rubber vs. 100-octane.

The outcome of a thorough consideration of the conflict before the Senate's Truman Committee was compromise—and inevitably so, since both rubber and aviation gasoline are essential to the Army as well as to the entire war program, but Patterson's cause did gain ground. Senators concurred with him that there must be no reduction in the planned air strength of the U. S. and Nelson announced that he was prepared to consider a re-scheduling of the gasoline and rubber programs to the advantage of the former.

Patterson maintained that because of higher priorities and greater allotments given rubber plants, claimants for the same materials needed in aviation gasoline plants, the Army's aviation gasoline had been curtailed to the danger point.

'Choke Point'

"Aviation gasoline is the 'choke point' in the nation's entire war-strategy picture, Patterson warned, claiming that planes necessary to train crews for combat action have already been grounded because of lack of fuel.

"To make our full-strength offensive possible we must have planes, with gas to fly them," he pleaded, adding:

"And we must have crews. To get the crews which we need for this offensive, they must be trained in combat ships. While these men are flying training planes, they use 91-octane gasoline. That does not interfere with this situation at all. But before they are sent to actual fighting against the Germans or Japs they have to be taught how to handle combat planes, and that takes 100-octane . . . If we do not have sufficient . . . gasoline to fly the number of hours required by our standards for transitional and operational training, there are only two alternatives: we can either reduce the number of crews we turn out in a given period, or we can lower our training standards. We do not intend to adopt the latter alternative."

Adding to the intensity of the aviation gasoline shortage, Patterson revealed, is a new and oddly enough "very encouraging factor," namely, that the percentage of planes lost in battle has been "much lower" than the Army's anticipated percentage, thus increasing scheduled fuel demands.

"Our success in air combat has been much greater than we expected, with smaller losses of planes," Patterson asserted, emphasizing, however, that "this very success makes our job more difficult. We are going to have a bigger air

force sooner than we expected. To take advantage of this, and we must in a war which depends so much on air supremacy, will require larger amounts of 100-octane gasoline sooner than we expected."

Patterson's bold statement that the rubber program was directly hindering a successful prosecution of the war set off a flare-up among Washington production "czars." Participants were: Petroleum Administrator for War Harold L. Ickes; Rubber Director William Jeffers; Under Secretary of Navy James Forrestal; WPB Chief Donald Nelson; and Patterson.

Jeffers Denies

Prompt denunciation of Patterson's charge that rubber was interfering with aviation gasoline production was made by Jeffers who maintained that, on the contrary, "the forced progress of the synthetic rubber campaign . . . has dragged forward all . . . phases of war" and that the 100-octane program is "months ahead" of where it would have been had it not been for the rubber director's accomplishments.

After a brief but intense battle of words in the public press, the six contestants were brought in to prove their cases before the Senate's Truman Committee.

Despite denial by Jeffers, evidence developed by the Committee did indicate that the rubber program has measurably hindered the aviation gasoline program. Developments also pointed out a slowness on the part of the Army in realizing the importance of aviation gasoline and in making its requirements known in sufficient time to be met.

Refutation of Patterson's claim that there is a present shortage of aviation gasoline came from Nelson, the first witness to appear before the Truman Committee. Consumption has been under production in February and March, he said.

He counter-charged at Patterson by stating that any present shortage is caused by the Army's faulty distribution rather than by any real over-all shortage. If training of combat crews has been held up for lack of fuel, it is because the 100-octane has been "at the wrong points", Nelson claimed.

Firm contradiction of Nelson however was made by Patterson, who told Truman committeemen:

"Let there be no mistake or misunderstanding about the reality of the shortage. The official report of the Petroleum Administration for War, under date of April, 1943, shows a shortage for April of 30,000 barrels a day, for May a shortage of 44,000 barrels a day. For months supply has been below requirements. I have a chart prepared by the PAW, which shows that for every month of 1943 the curve of estimated production is below the curve of requirements."

Patterson surprised Senators by a statement that there are no reserves of aviation gasoline in this country and that Army centers are operating completely on a "hand to mouth" basis.

He answered Nelson's suggestion that gasoline might be at the "wrong points", by explaining: "Inasmuch as we have

Opposes Lea Bill's Emphasis on Strong Federal Air Control

Provisions of the Lea Bill (H. R. 1012) giving the Federal government, rather than the states, strong regulatory powers over private and intrastate flying would unnecessarily delay development of private flying and private markets for post-war plane manufacturers, it is contended by E. W. Stanford, director of the Alabama Aviation Commission, in a brief filed with the House Committee on Interstate and Foreign Commerce.

Unless intrastate regulatory provisions are radically altered, the bill could have a serious effect upon the postwar economy, this brief held.

"Many aviation and financial minds in this country have expressed themselves as anticipating that, in the postwar era, the conversion of existing military aircraft manufacturing facilities into facilities for the mass production of commercial and private aircraft, may prove to be as great a factor in economic stabilization as was the mass production of moderate priced automobiles after the last World war," Stanford wrote. "Safe, comfortable and almost fool-proof private aircraft can be manufactured to sell for no more than present day automobiles. The market for private aircraft will be utterly ruined if private flying is given 'a back seat' in the scheme of things."

Stanford asserted that under the definition of "air commerce" in the Lea bill, the Federal government would have the power even in peace time to prohibit any privately owned aircraft from being flown in any area it might designate as useful to commercial transportation. "As an example," he said, "it could prohibit all flying other than commercial operations in Birmingham, or in any other large city which is active in commercial air traffic."

been unable to maintain any reserves in this country, Mr. Nelson's remarks on maldistribution were undoubtedly directed at our working supplies or operational reserves at overseas bases . . . It is indispensable to military operations to build up sound operational reserves overseas. They should be larger today than they are . . . The reasons for this ought to be self-evident . . ."

Comparison 'Pointless'

Nelson's comparison of 100-octane production and consumption for February and March, indicating that production exceeded consumption in those months, is "pointless" Patterson told Senators, explaining:

"The only true comparison is between current production and current requirements. Current requirements take into account three important factors which are not reflected in current consumption figures. These are: First and all important, the time factor, the time necessary to transport the gasoline from the refinery to its place of use. Thus gasoline produced in April should be compared to domestic consumption estimated for May and to overseas consumption estimated for July. Second, because of our rapidly growing air strength, future consumption for which we must produce today will be much greater than current consumption.

(Turn to page 32)

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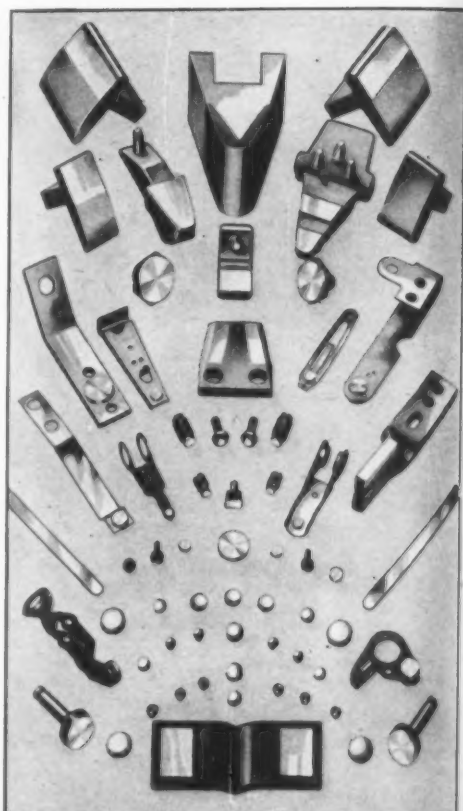
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Aviation Gas Program

(Continued from page 29)

tion. Third, actual consumption figures do not make allowance for the building up of overseas supplies."

Nelson's story to the Truman Committee was one relating the difficulties of balancing the nation's five "must" programs: rubber, aviation gasoline, planes, escort vessels, and merchant ships. Each head, aggressively promoting his own program, requests more materials than are available, requests are scaled down, and the scaling brings protests from five sides. Nelson reprimanded Patterson for taking his case before 130,000,000 Americans, instead of using "official procedure".

Nelson said he made his decision to give rubber certain materials preferences last Fall, despite threatening advice from three heads: Patterson claimed it would mean the loss of 18,000 airplanes; Ickes pointed out that the high-octane program would be "impaired"; and Forrestal said it would set the Navy's escort vessel program back six months.

Despite this advice, Nelson said he made his decision favoring the rubber program and told Senators that if he had it to make over again, it would be the same.

He added, parenthetically:

"May I say that those dire things that were supposed to have happened, in my opinion have not happened, although I think the 100-octane gasoline has been held back more than other programs. The escort vessel program has not suffered materially as a result of that decision. The airplane program has not suffered . . . We did hold back extrusion presses as a result . . . and we had to do some very fast things in order to prevent the extrusions being a limiting factor in airplanes. I think we have solved the extrusion program."

Complete 20%

The aviation gasoline program was given AA-3 and AA-4 priority ratings when the system was revised in June 1942, with AA-1, AA-2, and AA-2X being higher ratings, Nelson said. When the synthetic rubber program was undertaken in September, it received a priority rating of AA-2X, and a month or so later aviation gasoline was raised to the same priority status, he reported. When scheduling superseded the priorities system, it was decided to complete 20% of both unfinished rubber and high octane facilities. However, in February, Nelson kept the aviation gasoline figure at 20%, but raised the percentage of plants to be completed in the rubber program to 55%.

The loss in aviation gasoline to the rubber program—not including losses to other programs, such as escort vessels—is 4,413,600 barrels, Ickes reported when he testified before the Truman group.

Indifference and opposition by high military men and other officials to an augmented aviation gasoline program back in 1940 and 1941 is the major reason for the present situation, he testified.

We were producing 24,000 barrels of high octane daily in spring, 1941—"a ridiculously small drop in a very large war bucket," Ickes stated. In July of that year, he said he requested that production be increased to 80,000 barrels daily, but that the request was received "with

coolness" by the industry which to its own mind was already "overbuilt" in the sense it had twice the octane capacity that was being used. Finally in September, Secretary of Commerce Jesse Jones agreed to finance the proposed high-octane plants. In October those in authority agreed to double the original productive capacity, and in December—after Pearl Harbor—it was agreed that the original capacity should be tripled. Ickes reported.

400% Increase

Present aviation gasoline production represents a 400% increase over the pre-war figure of 24,000 barrels daily in spring, 1941, Ickes claimed, adding that the job has been done "in the face of continuing and discouraging obstacles . . . (and) notwithstanding a really baffling lack of understanding by many persons in high authority of the vital essentiality of 100-octane." The product has risen from 110-octane in 1940 to 130-octane, with good prospects of shortly rising to 140-octane, it was disclosed.

Vindicating his own agency, Ickes stated that more aviation gasoline is being produced now than the Army requested in May 1942—a statement which does not match with Patterson's that the Army "does not as yet have the production recommended by the War Dept. in February 1942, over 14 months ago."

"It was not until May 1942 that we were able to obtain semi-official requirements figures estimating that by December, 1943, the demand for 100-octane would be of the same general order of magnitude as the production which we had been setting out to make," Ickes emphasized, remarking that "even that was based on the then obsolete plane program and we were obliged to make our own estimate as to the additional quantities which the additional planes would require."

Between February and April, 1943, the Army's indicated requirements rose sharply "and the end is not yet in sight," Ickes said.

In guessing what future requirements of aviation gasoline are to be we ought to "err on the side of imagination, making most extravagant claims," he advised, exclaiming: "God knows, if we have too much we are going to have a flying world after the war and it won't do us any harm to have a present supply then of aviation gasoline."

"Up to now the Navy's needs in octane gasoline have been met," Forrestal told the Truman Committee, qualifying however, that "if Patterson's apprehensions are well founded—and I think they are—then we need to have apprehension over the future."

The bitterness evident in the first stages of the rubber vs. aviation gasoline battle, when Jeffers, reading Patterson's charges of rubber "favoritism," suggested that either he or Patterson resign, subsided by the time hearings were completed by the Truman group. Patterson and Jeffers announced that they were "getting together."

A surprising anti-climax to the battle came when the Truman Committee filed its report with the Senate, laying major blame for the flare-up, not with Patterson or Jeffers, but with Nelson.

"The present conflict is a result of basic

Senate Group Okays CPT Funds for WTS

A minor victory was scored by Congressional aviation leaders attempting to keep civil aviation as strong as possible during wartime, when a subcommittee of the Senate Commerce Committee recently approved legislation authorizing the Civil Aeronautics Administration to spend funds appropriated for the now defunct Civilian Pilot Training program on the new War training Service.

The War Department opposed the legislation on the ground that funds appropriated for "civilian" training should not be used in the training of military personnel. The War Department's position, if carried through, would mean that complete financial control over WTS should be with the military services, rather than CAA.

The legislation has already passed the House.

Truman Denies Withholding Data on Training Crashes

Denial that the Truman Committee is wilfully withholding information on Army training crashes which the American people are entitled to know was made by the Committee's chairman, Sen. Harry S. Truman (D., Mo.) promptly after the charge was made in the House by Rep. James Morrison (D., La.)

One of the major scandals of this war looms behind the alarming number of Army training crashes, and the Truman Committee, now reviewing Army records, "is sitting on the lid of a scandal far greater than the diabolical Carnegie Steel case, more outrageous than the Anaconda Wire and Cable indictment," Morrison asserted, continuing:

"If it takes a calamity to arouse the intelligence of this Congress to assume its responsibility on this matter, then such a catastrophe is already here . . . Today in the hands of the Truman Committee rests the answer to a most fiendish kind of sabotage. Thousands upon thousands of fine American boys lie in their untimely graves. Yet, the perpetrators of this mass murder are free, still active, protected by high Government officials."

"I think Rep. Morrison is talking through his hat," Truman remarked the following day, adding that it is not the function of his committee "to shoot off its face before the facts have been assembled and digested . . ."

weaknesses in the control of the war effort . . . (our report is directed) not at the issues involved but at the weaknesses in administration of the war effort which permit such disputes to reach the point of public controversy," the Committee's head, Sen. Harry S. Truman (D., Mo.) told the Senate.

Two things, it is evident from this dispute, must be accomplished, Truman said:

"First, the strong over-all authority of the War Production Board must be made a living reality . . ."

"Second, without dilution of the powers of the WPB chairman, the Board should function as a board. The persons in charge of each major program must sit around and discuss their problems together regularly and frequently."

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SIX NUTS THAT BRIDLE A THOUSAND HORSEPOWER



THIS is the business end of a powerful Diesel engine.

Well over a thousand horsepower spins through that coupling — through those six studs.

To connect that coupling, old-style lock fastenings wouldn't do. They couldn't both lock and be tightened to spread the load evenly. So studs failed.

The solution shows in the photo — Elastic Stop Nuts.

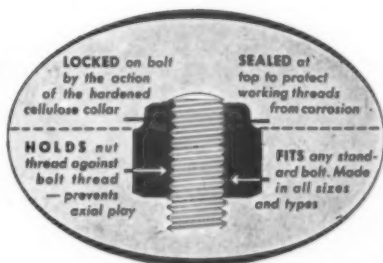
With these fastenings, uniform pressure was obtained as well as complete security against nuts working loose.

In the peacetime production to come, equally puzzling prob-

lems will plague manufacturers.

And we are prepared to help. Our engineers who today are solving war production problems will be ready to share their wide experience with you.

Whenever you have a fastening job let us know. Our men will work with you on it and recommend the correct Elastic Stop Nut to produce a better product or to facilitate its manufacture.



ELASTIC STOP NUTS

Lock fast to make things last

ELASTIC STOP NUT CORPORATION OF AMERICA, UNION, NEW JERSEY





Will Peace Come In Our Time?

Most certainly it will—and sooner than you may expect. With it will come the crucial test of whether or not American industry can convert as efficiently to peace as it has to war. From our extensive relations with hundreds of varied manufacturers we know of scores of amazing new products that only await the message of peace to come into being. Everyone looking ahead to that great day can even now count on the assistance of the Weatherhead plants which are producing vital parts for planes, tanks, ships, cars and trucks at the rate of *millions every day!*

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*Manufacturers of vital parts for the automotive, aviation,
refrigeration and other key industries.*

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

Kaemffert Urges Removal of Limits on Freedom of Air

Asserting that airplanes must be as free as ships, Waldemar Kaemffert, science editor of the *New York Times*, states in a pamphlet just published that "the whole concept of sovereignty, especially sovereignty in the air, must change." (The Airplane and Tomorrow's World, Public Affairs Committee, Inc., New York.)

"The development of the stratosphere plane," he points out, "will probably reduce the present restrictions on free passage through the air to absurdity, but the danger of sudden invasion will remain. When a hundred or more tons of freight or 200 passengers and their luggage are carried at 45,000 or more feet—a height where detection is hardly possible—it is not likely that airlines will pay much attention to sovereign rights that cannot be enforced when no landing is necessary."

Mr. Kaemffert's pamphlet published by the Public Affairs Committee, Inc., contends that when the relationship of air power to the postwar world is studied it becomes obvious that in order to maintain permanent peace "air traffic must be placed under a single international authority and that peace must be preserved with the aid of an international air force." He believes a small fleet of long range bombers stationed in 10 or 15 strategically located regions would be enough.

In his discussion of planes of the future, Mr. Kaemffert warns that "more research must be conducted, new designs and alloys must be worked out, engines of much greater power must be available before we can exceed even the 125-ton 'Mars' built by Glenn Martin. Yet when we remember that in 1903 at a time when the Wrights were making their first flights in secret, Professor Simon Newcomb published an article in which he proved to his satisfaction that the airplane had no chance because its supporting surface increased out of all reasonable proportion to the load that it was required to carry, it is rash to dismiss 250- and 650-ton leviathans as impossible. We certainly have every reason to expect that planes for 150 passengers will appear soon after the war. A dozen of those could carry as many passengers on the North Atlantic run to Great Britain as were carried first-class by all steamers in an average year between 1928 and 1938. Two such planes flying every day in each direction could carry 200,000 persons a year. The Queen Mary can carry only 90,000 in 48 possible annual voyages, without allowing time that should be spent in dry dock. Frequency of schedule rather than a range of 10,000 miles or more is the key to future operations of commercial planes.

"The first giant planes to appear after the war will probably have a ceiling no greater than the C-54's 35,000 feet—a ceiling which barely lies in the lower stratosphere in some latitudes and which is attained with supercharging. Then will come the true stratosphere plane. It will have a sealed cabin within which the pressure will be that which prevails at 10,000 feet. The purity of its air will

BOMBARDIER, by Henry B. Lent; The Macmillan Company, New York; 171 pages; Illustrated with Official Photographs, U. S. Army Air Forces.

In "Bombardier" Mr. Lent presents Tom Dixon as the typical young American intent upon winning his wings for his country. As in the many other books of this type now being written on the subject of Air Corps training programs, the reader has a chance to watch the trainee develop from the stage of a "pullet"—he has not as yet laid any eggs—until the day he is commissioned a Second Lieutenant

be maintained by oxygen regulators. It will climb at the rate of four miles a minute out of sight of land or ocean."

These huge, long-distance planes will radically change our ideas of geography, according to Mr. Kaemffert. We will have to learn to think of the world as divided into northern and southern hemispheres, instead of eastern and western, "partly because the Russians have demonstrated the practicability of transpolar flying, partly because the shortest route to much of Europe and Asia lies over the North Pole, partly because three-quarters of the earth's land lies in the northern hemisphere.

and receives his silver wings. It is easy to read and will have its appeal for the teenage boys now seriously considering the part they will want to play in the war. Its value as a true picture of bombardier life depends greatly upon the many fine Army Air Force illustrations accompanying the text.

—E. C.

THE ELEMENTS OF AEROFOIL AND AIRSCREW THEORY, by H. Glauert; Cambridge University Press, 1943; The Macmillan Co., New York; \$3.50. 228 pp.

This is the first American Edition of this English standard text. It lumps appropriately the consideration of airfoil and airscrew theory, giving an account of these elements in a form suitable for students who have no advance knowledge of hydrodynamics. Insofar as possible, complex mathematical analyses have been avoided, but the nature of the material treated precludes the possibility of eliminating the differential equations and integrals entirely.

The first sections of the book treat the fundamental principles of hydrodynamics necessary to a working knowledge of the airfoil theory development; secondly, the lift of the airfoil in two dimensional motion and the effect of viscosity on airfoil theory. Since the propeller (airscrew) is basically an airfoil problem, the development of propeller theory concludes the text.

Obituaries

Maj. Gen. Robert Olds

Maj. Gen. Robert Olds of the Army Air Forces died at the age of 46 in Tucson, Ariz., on April 28 of complications from pneumonia. He was the founder of the AAF Ferry Command and was commander of the Second Air Force until last February when he was relieved of his command to undergo treatment for arthritis.

He was an exponent of heavy bombardment and was a colonel in the War Plans Division of the office of the chief of the Air Corps when he took over the task of organizing the Ferry Command in June, 1941. Made a major general of the Second Air Force in May, 1942, he established headquarters at Fort George Wright in Washington and set up a forward echelon at Tucson.

He entered the Air Corps in January, 1917, later commanded the 17th Aero Squadron at San Antonio, and went to France as an instructor. Following the war he was in the War Plans Division of the Air Corps in Hawaii and became chief inspector.

Gen. Olds was commanding officer of the Second Bombardment Group at Langley Field, Va., when he led two good-will missions of Flying Fortresses on non-stop flights to South America in 1938 and 1939, for which he was awarded the Distinguished Flying Cross.

John K. Montgomery

John K. Montgomery, Washington representative of Consolidated Aircraft Corp., died in Washington Apr. 10. Associated with the aviation industry for years, Montgomery was formerly head of Tri American Aviation, his own sales agency in South America, where he represented Consolidated.

Capt. Kenneth Whiting

Capt. Kenneth Whiting, a pioneer in both the submarine and aviation services and commander of the Naval Air Station at Floyd Bennett Field, N. Y., died in Washington, D. C., April 24. He commanded the first American aeronautical detachment to reach France in the first World War and was one of the first Naval officers to be assigned to the Naval Aviation Training Station, Pensacola, Fla.

His varied career included assignment to the Bureau of Aeronautics when it was organized in 1921, the fitting out of several aircraft carriers, service as executive officer of the Saratoga, commander of several air stations, commander of the Fleet Air Base at Pearl Harbor from 1935 to 1937, and general inspector of Naval aircraft for the Eastern division of the Third Naval District at New York.

Gen. F. D. Lackland

Brig. Gen. Frank D. Lackland, 58, commanding officer of the 1st Wing at March Field, Cal., when he retired last June, died April 27 in Washington, D. C. He served in the aviation section of the Signal Corps during World War I and later became commandant of the Air Corps Advanced Flying School at Kelly Field, Tex., and air officer for the 8th Corps Area. As a major in 1933 he commanded the 12th Observation Group at Brooks Field, Tex., and in 1934 was assigned to the Plans Division Office of the Chief of the Air Corps in Washington. In 1935 he was made lieutenant colonel and chief of Field Service Section, Wright Field, Dayton, O. He was promoted to brigadier general in January, 1940.

Fighters are only as fast as **THEIR TIRES!**



*Drawing from actual photograph
of a cannon-bearing Bell Aircraft
Army P-39 Airacobra.*

The faster a fighter is in the air...the faster it has to take-off and land...naturally.

American engineering genius was more than equal to the challenge of giving us the world's fastest fighting planes...but it was up to General to build a tire that could take the terrific punishment *on the ground.*

Now...every day...America's fighters are proving that they have the fire-power and speed it takes to keep command of the air...and General Tires are proving that they can take them up and put them down *safely.*

For every kind of ship, General is supplying tires with the built-in strength and quality that spell *safety.* For your safety, too...depend on General.

See your Fixed Base Operator or Write
THE GENERAL TIRE & RUBBER CO.
Aviation Division, Akron, Ohio



**—KNOWN AROUND THE WORLD
FOR QUALITY AND SAFETY**

End-Product of Martin engineering is Army's Marauder medium bomber (shown at right), Navy's Mariner patrol bomber and PBM-3 transport, and R. A. F.'s Baltimore medium bomber.



Tomorrow's Giants have already been designed by Martin engineers. 125-ton airliners are ready to build whenever the demands of war or peace make it desirable. Martin engineers are planning even greater craft for tomorrow's Air Age.

Blueprint for Victory!

WHEN aircraft designs are released by parent companies to other companies for manufacture, what do they consist of? Are they just a sheaf of drawings . . . a portfolio of data?

Actually, the blueprints of a plane, if delivered in one bundle would fill a boxcar or several trucks.

Take the Martin B-26 Marauder: this big medium bomber couldn't carry the weight of a single set of its own blueprints, much less their bulk. By the end of 1942, the 2,000 Martin engineers had made nearly 20,000 individual drawings for this single type. Hardly a week

passes without modification or change to keep our military aircraft well ahead of enemy types, and each change means new engineering, new blueprints.

Combining patient research with bold vision, Martin engineers are unfolding a blueprint for Victory . . . and for the Air Age beyond!

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Builders of Dependable  Aircraft Since 1909



Future Victories in the air are now being mapped on Martin drawing boards. Over 2,000 Martin engineers devote 400,000 man-hours each month toward making America first in the air.



Engineer's Delight is this patented new adjustable Martin drawing board, which ends back-breaking work over flat desks. Increased comfort means increased efficiency and production from Martin engineers.

5 Foreign Lines Get Caribbean Permits

Board Emphasizes 'Temporary Nature of Wartime Routes

EMPHASIZING that its action does not constitute a permanent U. S. international aviation policy, the Civil Aeronautics Board announced May 6 that it had awarded temporary foreign air carrier permits to five foreign companies to inaugurate temporary air service between Miami, the Caribbean area and Central America.

At the same time, the Board denied applications of two domestic air carriers—National Airlines and Eastern—to furnish the same service.

The Board's decision was reached Apr. 7, approved by President Roosevelt May 1, and announced May 6. This latter date was eight months after CAB had called for Caribbean applications, warning that a "serious" shortage of transportation facilities existed which may "adversely affect the national defense and the relations of the U. S. with Latin American countries."

Foreign countries receiving routes were:

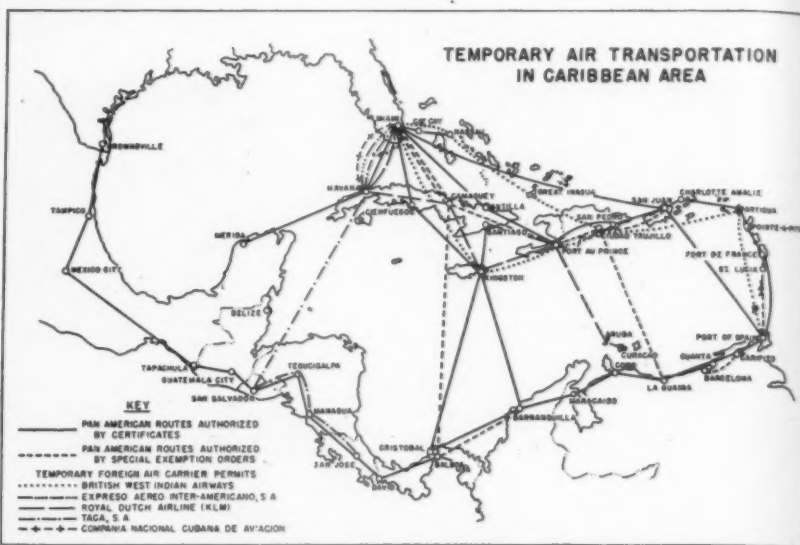
1. British West Indian Airways—Port of Spain, Trinidad, to Miami via Antigua, Ciudad Trujillo, and (a) beyond Ciudad Trujillo to Port-au-Prince and Kingston, and (b) beyond Ciudad Trujillo to Great Inagua and Nassau.
2. TACA—San Jose, Costa Rica, to Miami via Managua, Tegucigalpa, San Salvador and Havana.
3. KLM Royal Dutch Air Lines—Willemstad (Curacao), Netherlands West Indies, and Miami via Kingston, Port-au-Prince, Camaguey, Havana and Oranjestad (Aruba).
4. Expreso Aereo Inter-Americano—Havana to Miami.
5. Compania Nacional Cubana de Aviacion—Havana to Miami.

Permits will be effective for six months, with the provision that the Board may, without notice and hearing, extend them from time to time for periods not exceeding three months each, but not beyond a date six months after the end of the war.

The Board emphasized that "inasmuch as the necessity for these permits results from an emergency arising out of the prosecution of the war, the issuance thereof will not be recognized as constituting any basis for future claim of permanent policy with respect to international commercial aviation."

Discussing Caribbean operations, the opinion said: "Surface transportation in the Caribbean area has been disrupted because of the menace of enemy activity. Regular passenger steamship service has practically ceased, and freight service has been seriously affected. The result has been a dependence upon air transportation for the movement of a substantial amount of traffic which formerly utilized the surface facilities. In addition to the demand for air transportation attributable to this factor, a considerable volume of air traffic has been generated by activities concerned with the war . . .

(Turn to page 48)



Berle's Intervention Resulted in Award of Caribbean Lines

The following exclusive background story on how the Caribbean airline routes were awarded appeared in the May 7 issue of *American Aviation Daily*:

The Civil Aeronautics Board decided to deny all but applications for the Caribbean area and only reversed itself a few weeks ago after a personal appearance and appeal by Adolf A. Berle, Assistant Secretary of State, at an executive session of the Board, it has been learned authoritatively. As a result of Berle's pressure, CAB agreed to grant 6 months permits to 5 foreign carriers, and eliminated the 2 domestic applicants—National and Eastern—from consideration. CAB had intended to grant only the 2 Cuban applications.

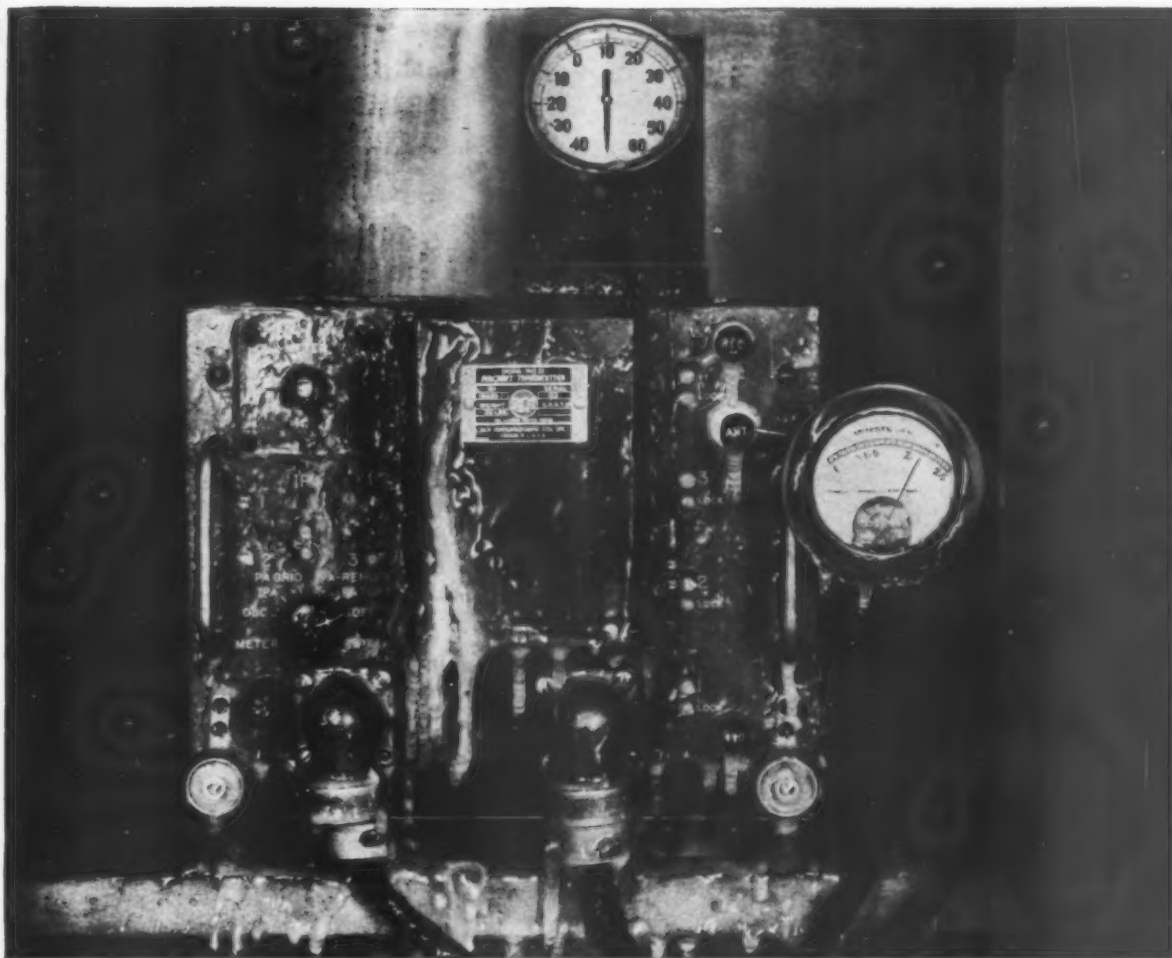
The CAB has been embarrassed by the Caribbean situation ever since it declared a critical shortage of service to exist in that area 8 months ago. It is now more clear than ever that CAB was an unwilling victim in a very involved inter-governmental maze in which a key figure has been Adolf Berle. The State Dept. official, who has never been accepted by the old-line State Dept. officials, and who has stirred up no end of internal friction and strife, has privately denied that he had anything to do with initiating the Caribbean applications, but there is firm reason to believe the contrary in view of inter-agency communications and other well-authenticated information.

CAB power is supreme and final in all domestic route certificates (excepting War Dept. influence during wartime) but in the for-

eign realm it is subject to final review by the President, who exercised his powers once previously in reversing the Board on American Airlines' application to Mexico City. As a routine procedure the White House relies on the State Dept. for advice on foreign airline matters, and Mr. Berle has not been slow in usurping considerable powers in aviation.

Many months having passed since it declared a critical shortage to exist in the Caribbean, CAB thought the best way out was to deny all applications (except the Cuban) and report that PAA had increased its services sufficiently to remove the worst bottlenecks. In addition, several of the foreign carriers (KLM, TACA and BWIA) were operating to Miami on itinerant charter permits and were utilizing their limited equipment as much as possible through this method regardless of any permanent or temporary permits.

CAB thusly drew up its formal decision, which had to clear the White House. When the decision reached Berle, he asked to be heard by CAB in executive session, and persuaded CAB to reverse itself. A compromise was reached by granting 5 foreign carriers temporary permits which cannot exist beyond 6 months after the war, but CAB was reluctant to establish any precedent at all at this time pending examination of the entire U. S. foreign air policy. Meantime, 2 U. S. domestic operators who filed for the Caribbean in good faith at CAB's invitation, and who spent large sums of money preparing their cases for the extensive hearings, were left out in the cold.



ARCTIC REHEARSAL...AT 76° BELOW

Today's demands on men and planes and equipment are the most severe the world has ever known. Battle-grounds have advanced into the sub-stratosphere—where even over the equator temperatures are scores of degrees below zero.

No radio equipment could remain operative under such conditions until scientific research solved the problems of tuning controls freezing, sensitive relays jamming, electrical adjustments changing and wires snapping. Without research, radio and electronic systems fail in these frigid temperatures where our

men and planes are fighting in their conquest over cold and altitude and the enemy.

To permit accurate scientific investigation of these problems, RCA recreates this intense cold in its laboratories, cold that is 9° lower than the stratosphere temperature, cold that equipment such as the ice-sheathed transmitter shown above must withstand for endless hours. In these icy chambers RCA engineers are looking ahead to the future, solving the problems that will be encountered as our fighters and bombers operate higher and higher

into the stratosphere.

Daily these engineers patiently work, subjecting equipment to temperatures as low as -76°, testing and retesting until operation is satisfactory—until dependability is assured. Thus RCA research helps to make our aviation radio equipment more efficient, more powerful, and more reliable in performing its vital tasks.

That's one reason, too, experts say: "For results in aviation radio performance, consult RCA research."



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Postwar Lines Should Handle Own Problems, Says Norlin

By ERIC BRAMLEY

AS complete postwar freedom of the air as possible, and a universal government policy of keeping "hands off" international air operations except for forming basic agreements, are advocated by Per Norlin, vice president of A. B. Aerotransport, Swedish airline, and president of Swedish Intercontinental Air Lines, a new company formed to participate in postwar air traffic.

In an exclusive interview with *American Aviation*, Norlin, who is visiting the U. S. in connection with problems concerning ABA's present operations, also gave a comprehensive description of the unique arrangements under which the prewar European airlines operated.

Although he is in this country to discuss wartime operating problems, Norlin's opinions on postwar flying are viewed as significant because Sweden is definitely interested in operating not only to the U. S. but to other parts of the world.

Swedish Intercontinental Air Lines (SILA), Norlin explained, has been formed by Swedish exporters, industrialists, shipping companies and other interests, with capital of about \$7,500,000. The Swedish government, he stated, will not participate in the postwar activities of the company.

Outside of formulating the basic agreements, Swedish opinion is that governments should not participate directly in the commercial side of postwar international aviation, he asserted, adding that all details as to the number of companies to operate, traffic problems, etc., should be worked out among the operators. A minimum of government participation is

desirable, he stressed.

Reciprocity will be essential in the postwar period, Norlin explained, adding, however, that it need not be on a company-for-company basis. In other words, he elaborated, the fact that three American companies were operating to Sweden would not necessarily mean that Sweden would insist upon three airlines to the U. S.

Four-engined landplanes are favored for trans-Atlantic service by Norlin and K. H. Larsson, ABA's chief engineer, who accompanied Norlin to this country. In addition to high-speed passenger service, both officials predict a definite need for exclusive mail-cargo planes, which would not necessarily be as fast or as elaborate as the passenger craft.

Sweden, they added, will continue to use foreign equipment rather than attempt to manufacture its own.

1st Class Mail by Air

The necessity for carriage of all first-class mail by air without surcharge is advocated by Norlin, who believes that the mail is entitled to travel by the fastest means of transportation available.

Emphasized by the Swedish airline executive was the necessity for an agreement between postwar international operators on standardized passenger fares, and the establishment of a universal payment for air mail. All mail accumulated at time of departure should be transported on the earliest plane, regardless of nationality, he asserted.

Postwar airlines, he admitted, will undoubtedly carry some traffic previously transported by steamship companies, but in addition they will create an entirely new class of travelers. The Swedish steamship companies are participating in SILA only to the extent of 25% and will not have control of the airline.

Turning to a discussion of the operation of pre-war airlines in Europe, Norlin revealed details not generally known in this country. Agreements between European airlines on traffic matters, ticketing, etc., were necessary because of the complexities of operating over many different countries, he explained. Through the International Air Traffic Association, complete agreement was reached on fares and charges of all kinds, ticketing, etc.

Thus, European airlines operating between the same points had identical fares. And these fares were never affected by cut-throat competition, although voluntary reductions were often made through agreement of the lines in IATA meetings.

Passenger fares, Norlin stated, varied depending upon the prosperity of the countries involved. For example, from Country A to Country B, passengers might be transported for 3c a mile, while from C to D the tariff might be 8c a mile. Fares were determined, he emphasized, by what the public could afford, and not by competition.

Mail was carried in pre-war Europe—all first-class mail—by the airlines at the universal rate of 2.5 gold francs per ton-kilometer.

Norlin also explained that a passenger buying a ticket in Paris for Sweden, for example, made his purchase at the offices of Air France, which handled all tickets for all airlines. ABA's Paris office distributed Swedish travel literature, handled timetables, etc., but never even knew whether space was available on any airline, he added.

Upon entering the offices of Air France, the passenger was informed concerning the airlines operating, times of departures, etc., but was then obliged to make his own choice of airline without suggestion from the ticket agent. The same system applied throughout Europe.

This type of cooperation, Norlin said, was essential on a continent where operations might cover several countries.

Service Important

The number of companies to be operating intercontinentally after the war will depend almost entirely upon service, he said. Regardless of whether or not a particular company is government-subsidized (which might enable it to offer a cheaper service), the airline or airlines offering the best and most satisfactory type of service will survive, he added.

ABA, which was formed in 1924, now occupies the unique position of furnishing airline service both to Germany and to the British Isles, one route operating from Stockholm to Berlin, another from Stockholm to Scotland, and another to Finland. The company owns five Douglas DC-3s with Pratt & Whitney Twin Wasp engines, five Junkers JU52s and two Fokker F12s.

During the calendar year 1942, ABA flew 758,856 revenue miles, carried 30,100 revenue passengers a total of 8,973,003 revenue passenger miles. Express carried totaled 1,876,320 lbs., while mail reached 972,440 lbs. Ton-miles flown were 1,383,460. Operations of the company during normal peacetime were 55% greater than the above figures.

Subsidies, which are received directly from the Swedish government, amounted to 8.6% of total income in 1942. When the company first started, these subsidies were 25%.

In 19 years of operation, ABA has killed only one passenger. Norlin expresses regret that the one fatality happened to be an American.



American Aviation Photo by Aukers

Swedish Visitors: K-H. Larsson, left, chief engineer of A. B. Aerotransport, Swedish airline, and Per A. Norlin, center, vice-president of ABA and president of Swedish Intercontinental Air Lines, which has been formed to participate in postwar aviation, are shown here with Tore H. Nilert, right, ABA's U. S. representative. Norlin and Larsson are in the U. S. to discuss present Swedish airline equipment problems.



COMMUNICATION CLERKS



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... to our fellow workers on the Fighting Fronts

MANY OF YOU out there on the fighting fronts once worked side by side with us here at United Air Lines. It's hard for us to visualize what your lives must be like today. For we, like so many millions of Americans, have no enemy hurling bombs and shells at us to remind us that his goal is our total destruction.

For that reason, perhaps it has taken us longer to realize the full meaning of all-out war. Perhaps we've let food rationing, and taxes, and the number of miles we can drive our cars become overly important to us.

We cannot all shoot down Zeros. We cannot all sink U-boats. We cannot all blast Nazi pillboxes to powder.

But unless we work harder and better today than yesterday, we delay your return home. And when you do come back to your job here at United, we must be able to look you squarely in the eye in the honest knowledge that we have carried our full share of this war's burden.

Realizing the urgent need for every ounce of energy and courage we can muster, we of United volunteer this pledge!

This is our pledge to you . . .

★ I will do the best job I know how to do.

★ I will fulfill my responsibility as a citizen by buying War Bonds, taking part in Civilian Defense activities, supporting the Red Cross, and performing willingly all other home front duties required of me.

★ I will neither spread rumors nor talk about anything that might help the enemy.

★ I will not complain.

★ I will accept my sacrifices here just as unselfishly as you are accepting your greater sacrifices out there.

The Employees of UNITED AIR LINES

This pledge has been forwarded to each of the 900 United Air Lines employees in the Armed Forces all over the world

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Airline Commentary

CAB was finally forced to restate its policy that no applications for postwar global air routes would be considered at this time . . . This action was taken to prevent a flood of applications . . . Some airlines that had not filed applications had been receiving protests from stockholders, who wanted to know why their company hadn't filed along with the others . . . The Board's assurance that no weight will be given to relative dates of filing is expected to stem the tide . . . Incidentally, this restatement of policy confirms this column's prediction in the last issue that no action would be taken . . . We take a bow . . .

High officials in Washington still claim that the airlines are going to get some more airplanes for commercial service. . . They add, however, that the number received won't be very large. . .

Our hats are off to the United Air Lines and Eastern Air Lines . . . Their new joint ticket office in the Statler Hotel, Washington, is just about the finest we've seen . . . Zay Smith, UAL's superintendent of design, did an excellent job on the interior . . . UAL and EAL celebrated the opening of the office by throwing a swell cocktail party on May 7 . . . Incidentally, this was the first airline shindig in a long time . . . Not like the good old prewar days when there was liable to be a party every time an airline added another schedule . . .

A story about our good friend Leo Baron, TWA's publicity director, reaches our ears . . . It seems that Leo is collecting all pertinent data on postwar aviation—predictions, plans, etc. . . He keeps the material in a box in his desk drawer . . . The box is labeled "Fantasia" . . .

From time to time this column has reported on record-breaking war-time load factors . . . Here's the latest: Pennsylvania-Central's three trips out of Norfolk had 100% load factors for the entire month of April . . . the evening departure from Norfolk has not had an empty seat since Oct. 26, 1942 . . . One of these days the plane will leave with only 20 passengers, and the company will probably start an investigation . . .

That the air transport industry is giving attention to postwar improvements in service is a foregone conclusion . . . That other forms of transportation are far from asleep is something that the air transport industry should keep in mind . . . Pullman Standard Car Manufacturing Co. recently ran an ad in a railroad trade publication under the heading "Postwar Competition Will Force the Railroads to Reduce Operating Expenses" . . . The ad said, in part, "When Victory is won, the peace-time struggle for traffic will again test the resourcefulness of the railroads. The retirement of a large number of veteran freight cars will present an opportunity for far-seeing railway officials to make replacements with light weight cars . . . cars that will reduce operating costs . . . It behooves all who have the interest of the railroads at heart to give all possible study to the problem of reducing railroad operating expenses and Pullman-Standard is eager to work with railroad officials on light weight car designs" . . .

With women holding down innumerable airline jobs, there's never a dull moment . . . At Washington National Airport, American Airlines has some women ramp agents, among whose duties is the job of directing incoming planes to their proper places on the ramp . . . Recently, so the story goes, a plane had just landed, and was taxiing toward the administration building when one of the American agents commenced signaling the pilot where to park . . . The pilot paid absolutely no attention to her, but why should he? . . . It was a Pennsylvania-Central Airlines plane . . . (He might at least have waved back, the cad) . . .

Progress is being made at the Civil Aeronautics Board on several subjects of importance to the industry . . . Last step in the Board's investigation of passenger fares (11 airlines were ordered to show cause why their fares should not be reduced 10%) was a pre-hearing conference held May 4 . . . CAB Examiner J. Francis Reilly who has handled some hot ones in the past, will conduct the proceedings . . . And it looks like he's in for another hot one here . . .

Probably no proceeding of the Board has attracted more attention than the investigation announced three weeks ago into the feeder airline question . . . Requests for further information have come in . . . Next step here will be a communication to all the parties informing them of procedure . . . CAB Examiner William J. Madden will handle this one . . .

E. B.

At NAA-PCA Party

(On Apr. 26 the National Aeronautic Association gave a dinner in Washington in honor of Pennsylvania-Central Airlines' 16th anniversary. Some of the guests at the dinner are shown below.)



Maj. Gen. Harold L. George, Commanding General, Air Transport Command, is shown with C. Bedell Monro, PCA president.



Smith W. Purdum, left, Second Assistant Postmaster General, chats with Rep. Alfred L. Bulwinkle (D., N. C.), member of the House Interstate and Foreign Commerce Committee.



Seated at the table, left to right, are Sen. Pat McCarran (D., Nev.); Oswald Ryan, member of the Civil Aeronautics Board, and Sen. James J. Davis (R., Pa.).



J. J. O'Donovan, PCA vice president, and Brig. Gen. William E. Hall, Deputy Chief of the Air Staff and the Army's youngest general.

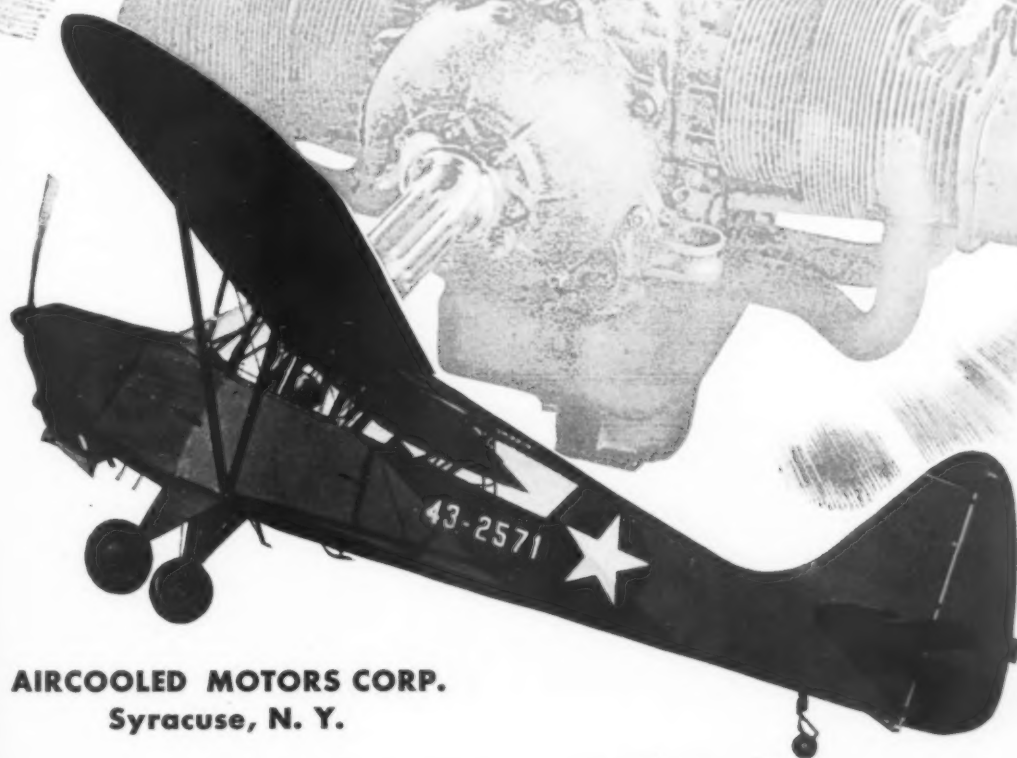


powers the *Interstate L-6*, newest AAF Liaison Plane

It is significant that the Army Air Forces should have chosen Franklin power for its newest observation and liaison plane, the Interstate L-6. Now in quantity production, this plane is an entirely new design with many advanced features . . . including a light plane engine which has satisfactorily completed an AN (Army-Navy)

model test *without reservation* . . . Franklin aircraft engine model 4ACG-199-H3.

When the war has been won, Franklin engines will again be available for commercial and private-owner planes. Specify "Franklin" . . . and get the finest in aircraft power for your post-war ship.



AIRCOOLED MOTORS CORP.
Syracuse, N. Y.



AT LAST...AUTOMATIC S-O-S FOR MEN ADrift AT SEA

Now it can be told...the story of a pint-sized Bendix transmitter that is saving the lives of American pilots adrift and in distress at sea. Thousands of planes have already been supplied with this equipment.

The transmitter is entirely automatic—power for the set as well as for a signal light is generated through a hand crank...while a built-in keying device sends out international S-O-S signals over an area of more than 40,000 square miles. Manual keying also can be used.

Around the world men in uniform

affectionately call this Bendix set the "Gibson Girl"—its wasp-like waist fits between the knees for easy operation. The case is water-tight and is equipped with a parachute for any emergency. Both a kite and a balloon are packed with the set for raising the aerial in any weather.

As part of the great Invisible Crew, Bendix Aviation, Ltd., is justly proud of this development—exclusively designed and being manufactured by us in collaboration with the U. S. Army Signal Corps. Bendix Aviation, Ltd., North Hollywood, California.

Join the Order of Gibson Girls. If you owe your life to this equipment, or know of someone who has been saved, write today for credentials in the most exclusive club in the world—the order of Gibson Girls.



TCA Starts Travel Card Discounts

A significant airline development of the past fortnight was announcement by Trans-Canada Air Lines that it is now issuing its own air travel cards by means of which passengers may receive credit and discounts. Holders of cards, it explained, will be entitled to a 15% discount on published one-way fares over TCA routes in Canada.

Cards issued by U. S. domestic airlines entitle the holders to credit, but discount features were discontinued last summer.

Mexicans Cautious on Foreign Airlines Gen. Carranza Says

Mexico wishes to concentrate on development of its own civil airlines, and will not throw open the door to unlimited expansion of U. S. carriers south of the border, according to Gen. Alberto Salinas Carranza, chief of Mexico's Department of Civil Aeronautics.

In a press conference held in Washington on Apr. 29, Gen. Carranza, asked by *American Aviation* if more U. S. airlines would be welcome in Mexico, asserted that there are now enough international lines in that country to handle the traffic. Any increase, he stated, could be met by adding schedules.

Pan American Airways and American Airlines are the only U. S. carriers now serving Mexico.

Answering further questions, however, Gen. Carranza admitted that more lines from the U. S. might be required at some time in the future.

"We prefer to have our own lines go south, but that doesn't mean we don't want the others," he explained.

He indicated that the Mexican government "sees with sympathy" and approves the proposal of United Air Lines to obtain 75% control of Lineas Aereas Mineras, a Mexican company. United is now attempting to obtain Civil Aeronautics Board approval of the purchase. Gen. Carranza pointed out that management of LAMSA would remain in Mexican hands.

In the past 11 months Mexican airlines have almost doubled their mileage, Gen. Carranza stated, explaining that the increase was from 26,000 route-kilometers to 48,000. Traffic of all kinds has jumped 304% over the same period, he added, attributing the increase to lack of other forms of transportation.

Mexican airlines, he said, are operating all types of equipment, from single-engine planes to DC-3s.

Southwest Files Application

Southwest Airways Co. has filed application for 20 pick-up routes in Texas, Oklahoma, Louisiana, Arkansas, and New Mexico, covering 5,844 miles and serving 301 communities. Routes are sought from Ft. Worth-Dallas to Texarkana, Shreveport, Lufkin, Austin, San Angelo, Odessa, and Wichita Falls, from Little Rock to Texarkana, Houston-Lufkin, San Antonio-Austin, San Antonio-San Angelo, Amarillo-Odessa, Oklahoma City-Wichita Falls, Houston-Corpus Christi, San Antonio-Corpus Christi, San Antonio-Laredo, Amarillo-Clinton, Oklahoma City-Okmulgee, Oklahoma City-Ft. Smith and Brownsville-Laredo.

Colonial Elects Directors

George E. Tibble, former vice president-finance, has been elected to the board of directors of Colonial Airlines. Other new directors include Peter Norman Dawes, Montreal; Alexander C. Dick, secretary and general counsel, and Francis Hartley Jr., Boston.

Speas, Ehrke Win 1942 ATA Awards

R. Dixon Speas, American Airlines research engineer, and Robert H. Ehrke, American meteorologist, have been awarded first and second prizes, respectively, for the best research conducted by



Ehrke

Speas

airline employees during 1942 which has a practical application to airline dispatching or meteorology.

The awards are sponsored by the Air Transport Association. Speas' paper was entitled "Presentation of Meteorological Information to Flight Personnel," while Ehrke wrote on "Problems of Flight Operation in the New York Area, Mar. 17, 1942."

United Enlarges ATC Training Program

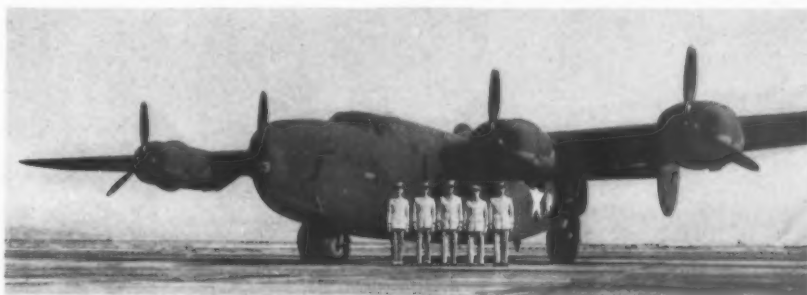
An accelerated program of training both flight and ground personnel of the Air Transport Command of the Army Air Forces has been undertaken by United Air Lines at key points along its system, it is announced by W. A. Patterson, president, who described the move as one more phase of airline aid to the war program.

In addition to the large training center which United has been operating since 1940 for Army Air Forces mechanics and technicians at Oakland, Cal., the company has undertaken the large-scale training of Air Transport Command pilots and mechanics at Denver, Colo., and also has begun the training of a substantial number of mechanics at such key stations along its system as New York, Chicago, San Francisco, Portland and Seattle.

Patterson said that Army pilots are reporting at United's Denver training center for a one-month advance course after completing their primary and secondary training at various Army training schools. Army mechanics are reporting for practical line maintenance training at United's various stations after graduating from Army technical schools throughout the country. In addition, Army navigators, radio operators and flight engineers receive advance instruction at United's training center at Oakland.

The pilot training at Denver consists of both ground and flight instruction plus assignment of the pilots to flights aboard planes which United is operating in contract cargo operations. They then are reporting for regular active assignment on planes of the Air Transport Command operating both in this country and over water to foreign lands. Army mechanics trained by United will become crew chiefs on routes operated by the Air Transport Command.

United's training of Army pilots at Denver is in addition to the company's training of its own pilots for both commercial and military operations. Since its establishment in 1940, the company's pilot training school has graduated approximately 250 who have become United co-pilots.



UAL Army Plane: This is the first picture that has been approved for publication of one of the giant Consolidated cargo planes being operated by United Air Lines for the Air Transport Command. UAL, which flies Army routes not only within the U. S. but also to foreign lands, is operating more route miles in this service than in its regular commercial flights.

Trans-Atlantic Air Insurance Charges Are Reduced 60%

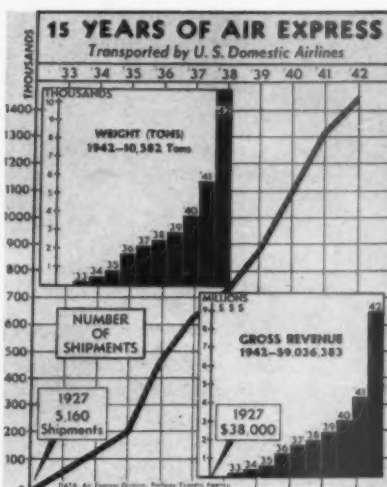
A 60% reduction in premium rates for civilian air travel passenger trip insurance to Great Britain and return has been announced by Stewart, Smith (Canada) Limited, aviation insurance brokers of Montreal, Canada. The firm stated that it has negotiated a joint contract with Lloyd's underwriters and British companies.

Rates recently quoted for such insurance have been approximately 2% for the round trip, whereas the new rate is $\frac{3}{4}$ % of the sum insured up to \$100,000 per passenger for the round trip, which includes up to two months in Great Britain, the company said.

All war risks are covered and in addition to the usual death and dismemberment clauses, the insurance features a weekly payment and hospital allowances for temporary disability resulting from an accident or war injuries.

Because trans-Atlantic travel by air at present is not available to everyone, travel by vessel is permitted under the same insurance, the brokers announced, adding, however, that "the underwriters prefer the air-borne passenger risk."

G. Shannon Grover, general manager of the company, reports a large volume of business already placed in amounts ranging from \$15,000 to the limit of \$100,000.



Cincinnati Plans Airports

The Cincinnati, O., Planning Commission has completed the mapping of comprehensive plans for construction of several airports on the outskirts of Cincinnati and has referred them to the Regional Planning Commission, according to Alfred Bettman, chairman. The project is envisioned as an encircling belt of airports to be connected by a road, and is intended to accommodate increased post-war air traffic.

Rail Passenger Revenues Far Outgain Airlines

The 1942 passenger revenues of nine out of 17 of the country's leading railroads showed increases of more than 100% over 1941, while the largest gain shown by the four leading airlines was 11.8%, according to a recent survey.

Eleven of the domestic airlines have been ordered by the Civil Aeronautics Board to show cause why their passenger fares should not be reduced 10%, and three lines have indicated that they will institute reductions about June 1. Other lines have asked that the proceeding be dismissed.

The railroads, on the other hand, are fighting efforts of OPA to force a 9% reduction in their passenger fares. "If, at the first sign of adequate earnings, rates are to be cut forthwith, without regard to long years of low earnings in the past or the prospects of the future, railroads cannot keep themselves in condition to meet the imperative needs of the nation," according to the Association of American Railroads.

Following is a table (all rail figures from *Railway Age* magazine) showing 1941 and 1942 passenger revenues of leading Class I railroads and four leading airlines:

Carrier	1941	1942	Increase 1942
Pennsylvania	\$89,022,891	\$169,122,194	90.0%
New York Central	66,609,863	112,259,031	68.5
Southern Pacific	26,501,019	58,354,530	120.2
New York, New Haven & Hartford	30,849,206	55,657,622	80.4
Atchinson, Topeka & Santa Fe System	22,786,021	52,987,080	132.5
Union Pacific	21,554,471	45,793,903	112.5
Southern Railway	14,232,779	36,265,338	154.8
Seaboard Air Line	11,026,177	27,169,323	146.4
Baltimore & Ohio	13,861,068	26,795,735	93.3
Atlantic Coast Line	11,817,851	25,822,233	118.5
Chicago, Rock Island & Pacific	10,924,931	24,724,423	126.3
Louisville & Nashville	8,976,429	23,288,244	159.4
Illinois Central System	12,542,496	22,531,696	79.6
Long Island	16,532,476	21,761,287	31.6
Chicago & Northwestern	12,916,384	20,382,903	57.8
Chicago, Burlington & Quincy	10,697,250	19,100,283	78.6
Missouri Pacific	8,175,488	19,019,869	132.6
AMERICAN AIRLINES, INC.	20,780,423	21,512,980	3.5
UNITED AIR LINES TRANSPORT CORP.	13,592,619	15,198,088	11.8
EASTERN AIR LINES	11,203,597	12,159,365	8.5
TRANSCONTINENTAL & WESTERN AIR	10,415,232	10,900,372	4.6

1946 Air Travel Will Be Four Times 1941; Says W. A. M. Burden

Domestic airlines will fly more than six billion passenger miles in 1946, four times the 1941 total, predicts William A. M. Burden, special aviation assistant to the Secretary of Commerce. In an article in the May issue of *Domestic Commerce* he foresees that intercontinental and transoceanic passenger traffic in American planes will increase six times and mail and express traffic at least eight times.

Air transport, he believes, will play as vital a part in securing our future peace and prosperity as it is in winning the war. "The future of air transport, in short, is almost literally boundless. It has untold benefits to bestow upon us if we use it right and recognize that, like all else, it has its limitations. It is not a panacea for all ills," he warns.

"It has a vitally important job to do, and it will do it by supplementing and not supplanting other means of transport, as some enthusiasts would have us believe. In the world of tomorrow we shall need all forms of transport, for there will be work enough—widely different types of work—for each of them to do."

"We shall have, above all, the 'know how' acquired from air transport operation the world over," says Mr. Burden, "on all continents and the seas between. Then too there is going to be a phenomenal growth in private flying after the war, a growth as phenomenal as the increase in motoring for business or pleasure purposes after the last war."

The country will be well prepared for the new air age, according to Mr. Burden, because more than two million trained men—pilots, navigators, radio men, mechanics and other aviation specialists—will be released from military service. Great quantities of materials, immense manufacturing facilities and a large labor supply will be released for the uses of civil aviation. Many models of combat aircraft will be quickly and easily converted to commercial purposes.

Since 1940, Mr. Burden points out, there has been an eleven-fold increase in the number of our major airports, besides the scores being built by the Army and Navy which eventually can be turned over to civilian aircraft. During the past few years Alaska has been given as fine a network of airports and airways as any section of the United States; similar installations are being made in our island possessions. CAA's six super radio stations now provide direct communication with a plane in flight anywhere on the globe.

10 Routes Sought

Ten airline routes, to be operated with transport planes, pick-up, ships and helicopters, are sought in application filed with CAB by Philadelphia and Eastern Airlines. Routes asked are Elmira-Philadelphia, Binghamton-Philadelphia, Philadelphia-Easton-New York, Philadelphia-Trenton-New York, Philadelphia-Camden-New York, Philadelphia-Norfolk, Clarksburg - Philadelphia, Washington - Harrisburg, and Washington-Philadelphia. Application was filed by Walter C. Miller, 651 Juliet Ave., Lancaster, Pa.

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Behind OUR VICTORIES *is* SUPERIOR TRAINING...

Victories in the Air originate on our home front—on the Army training fields where our Pilots receive the thorough schooling that prepares them for combat.

The Bomber Pilot in training must have absolute confidence in his equipment, in order to attain the concentration on accuracy required in modern precision bombing. Complete engine reliability is of utmost importance in gaining that assurance.

Jacobs Engines power more twin-engine Training Planes than all other engines combined—because they give the Bomber student that freedom to concentrate.

These efficient, reliable engines will give the same feeling of assurance to Commercial Pilots and to the Business Man and the Sportsman flying their own planes, after Victory is achieved.



JACOBS AIRCRAFT Engines

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CAL to Operate New Modification Center

A huge new Army Air Forces modification center to be constructed at Denver Municipal Airport will be operated by Continental Air Lines, which already is supervising a similar center, according to announcement by Terrell C. Drinkwater, executive vice president of the company.

The new center, to cost over \$3,000,000, will dwarf the first, which will continue in its war job, Drinkwater said. It will be under the direction of Stanley R. Shatto, CAL vice president in charge of engineering and maintenance.

Plans for the new plant call for construction of two hangars, an office building and shop facilities. The twin parallel hangars will have 160-ft. spans and will be 600 ft. long. Buildings will contain 3,800,000 sq. ft. of airplane parking area and a 200,000 sq. ft. automobile parking lot.

5 Caribbean Permits Awarded

(Continued from page 38)

"We find that the existing common carrier air service (limited as it is by the unavailability of equipment) is inadequate to handle, during the present emergency period of war, the full amount of traffic between Miami and points in the Caribbean area which is important to the national defense and to relations of the U. S. with other American republics. The inadequacy is general and has definitely and substantially affected practically all points in the area, and the congestion is particularly acute on the services between Miami and San Juan-Trinidad, Miami and Balboa, Miami and Havana, and Miami and Barranquilla."

In refusing to permit Eastern and National to enter the Caribbean area, the Board asserted that "balancing the needs of the Caribbean area as shown on the present record and the needs of the es-

sential war traffic on the routes of National and Eastern, we conclude that a transfer of equipment from the domestic system to the Caribbean is not justified under existing circumstances."

CAB did not blame Pan American Airways for the inadequacy of Caribbean transportation, pointing out that the company has been unable to get equip-

The Tin Goose Flies North

The old tried and true Ford trimotored airplane, long used in South America, will make a triumphant entry into Miami when Expreso Aereo Inter-Americano begins Miami-Havana operations under a temporary CAB certificate. The CAB decision disclosed that the company will use one of the "tin geese" as well as a Sikorsky S-38-B flying boat.

AIR TRANSPORT COMMAND

(INSIGNIA OF AIR CARRIER CONTRACT PERSONNEL)



KITTY HAWK MEMORIAL EMBLEM
"Achieved By Dauntless Resolution
and Unconquerable Faith"

(On Shoulder Loop)



(Cap Insignia)

WINGS
(Above Left Breast Pocket)



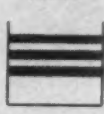
SUPERVISORY OFFICER (Chief Pilot)

BARS
(On Shoulder Loop)
(Shirt or Trench Coat)



CAPTAIN (Pilot)

STRIPES
(On Lower Sleeve)
(Blouse)



FIRST OFFICER (Co-Pilot)



FLIGHT NAVIGATOR



FLIGHT RADIO OPERATOR



FLIGHT MECHANIC

ment, and has done all that was possible with the planes on hand.

During July, August and September, 1942, a total of 10,367 passengers moved out of Miami on the Caribbean services of PAA, while 12,412 passengers arrived at Miami. During the same period 336,114 lbs. of mail moved south from Miami, together with 732,168 lbs. of express. Northbound mail was 192,143 lbs., express 155,256 lbs.

Passengers on PAA's waiting list for transportation from Miami to Caribbean points at the end of July, August, September and October were 423, 321, 413, and 173, respectively. Passengers with northbound reservations at the end of July, August and September totaled 1,247, 1,189 and 1,099, respectively.

Backlog of southbound express for the same three months was 88,000 lbs., 121,300 lbs. and 109,800 lbs., respectively.

"The amount of the backlog of express at Miami is by no means a reflection of the volume of express that would be available if more facilities for transportation were available," CAB said.

"Since May, 1942, there has been in effect a notice to shippers issued by Pan American placing an embargo on all air express shipments to Cuba, Brazil, Haiti, Dominican Republic, Puerto Rico, Virgin Islands, Antigua, Guadeloupe, Martinique, Trinidad, British Guiana, Surinam, French Guiana, and Paraguay, except those under transportation priority issued by the United States government and shipments under United States government bills of lading.

"During August, 1942, approximately two-thirds of the requests for priorities for shipments to the Caribbean area under export licenses were rejected, and many of the rejected requests covered items important to the public health and the economy of the country involved.

"A more lenient policy in this respect was substantially adopted, and practically all materials of this essential category are now granted priorities. However, there was also evidence that many exporters who applied for priorities during August did not apply for such priorities thereafter because of the previous rejections."

ATC Identification: Airline pilots and crew members working for the Air Transport Command wear ATC uniforms with insignia as shown above, in a chart prepared by American Airlines.

SINCE 1929

TRAINING

MEN YOU CAN TRUST

Curtiss-Wright Technical Institute has for many years taken great pride in training **QUALITY** graduates for the exacting requirements of the Aircraft Industry and the U. S. Army Air Forces. Our proved, tested and directly planned courses are taught by an unsurpassed and experienced faculty of practical engineers and technicians.

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MAJOR C. C. MOSELEY, PRESIDENT SINCE ITS INCEPTION AND SOLE OWNER
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GLENDALE (LOS ANGELES CO.) CALIF.
CONTRACTORS TO THE
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THIS TOWER OVERLOOKS AVIATION'S MOST DISTINGUISHED SCHOOL OF AERONAUTICS • FOUNDED IN 1929

Airline Personnel



Robinson

Rentz



A. C. Smith

Raish



Moulton

Frederick

In The Services

Lieut. Col. W. Fiske Marshall, Marine Corps, formerly of Northwest Airlines' administrative branch, and known as one of the company's best pilots, has been awarded the Silver Star for "conspicuous gallantry, intrepidity and devotion to duty" in flying transport planes into and out of Guadalcanal.

Robert J. Rentz, commanding officer of Stout Field, Indianapolis, and former American Airlines pilot, has been promoted from major to lieutenant colonel.

T. B. Wilson, chairman of the board of TWA, who is on military leave of absence, has been promoted from colonel to brigadier general. He is transportation chief of the Air Forces in Australia.

Samuel E. Gates, former head of CAB's international division, who is now with the Air Transport Command, has been promoted from major to lieutenant colonel.

Maj. Owen C. Ross, who was a PCA pilot, has been awarded the Silver Star for gallantry in action with the Marines.

Capt. James D. Henry, assistant to the president of Pennsylvania-Central, is aide de camp to Brig. Gen. Henry F. Miller, Air Service Command. He is stationed in England.

Traffic and Sales

Don Raish, formerly district traffic manager for Continental at El Paso, has been named to the new office of superintendent of passenger and reservations service.

Bradford Gibson has been appointed district traffic manager for American in New York.

Robert I. Robinson, for the past three years public relations chief for TWA in New York, has been named assistant to **E. O. Cocke**, the company's general traffic manager. He will be headquartered in Kansas City.

Kenneth V. James, who since 1934 has been associated with the Tennessee Valley Authority as economist and statistician, has joined TWA as assistant to **V. P. Conroy**, vice president-traffic.

Arthur C. Smith, Continental's Denver dtm, has been named to the new post of manager of mail, express and freight.

Sydney D. Smith, former San Francisco dtm for Pan American, has been named traffic manager of the Alaskan division.

Lorin Randall, formerly assistant chief passenger agent for American in Chicago, has been named chief passenger agent, succeeding **Florian Stevens**, now chief operations agent in Syracuse.

Operations

O. T. Thomsen has joined TWA as assistant to **J. C. Franklin**, vice president-engineering.

Philip H. Stare and **Jay S. Armstrong** are now student co-pilots with Braniff. **Herman R. Gilden** has been named general manager of Northwest's aircraft modification project at St. Paul. He was formerly with the AAF as area production supervisor.

Promoted to reserve captains by Pennsylvania-Central are **N. C. Hunter**, **R. Paulis**, **D. J. Dutcher**, **S. D. Mason** and **S. G. Adams**. Promoted to second officers are **H. R. Davis**, **E. C. Kegley**, **J. N. Bolick**, **W. W. Lawrence**, **W. E. O'Brien**.

Miscellaneous

Dr. John H. Frederick, well-known transportation authority, has been named economic consultant by Braniff. He is professor of transportation at the University of Texas.

R. J. Moulton Jr., former assistant traffic and cargo manager of Continental, has been named head of the company's new office of research, tariffs and schedules.

Frank P. Flint, assistant comptroller for Pennsylvania-Central, has been named manager of the company's new employee relations office.

Patricia O'Malley, former chief of CAA press relations, and well known throughout the industry, has joined TWA as chief of the airline's public information department in Washington.

Edward M. Johnson, former manager of the New York Press Association, has been named director of planning and research by Delta.

John P. Gilbert is heading up Northeast's new public relations department. He is assisted by **M. J. Goslin**, **E. R. Place** and **M. E. Belcher**.

Camille L. (Rosie) Stein, Northwest's director of passenger service, has been named chairman of the passenger service committee of the Air Traffic Conference, being the first woman to hold that position.

Ayres Compton, veteran Texas newspaperman, has been named chief of Braniff's news bureau.

William J. Eiden, former assistant chief accountant for Foley Brothers, contractors, has joined Northwest as administrative assistant to **E. I. Whyatt**, vice president-treasurer.



Johnson

Gilbert




Flint

O'Malley



Gilden

Gibson



There'll be White Stripes in the Sky

... "painted" by Radio

When the last Axis warplane has been knocked out of the sky—when the last load of destruction has been dumped on the enemies of freedom—aviation and communication will have a happier job.

Thousands of American planes will fly the airways of the future—swift passenger liners, great cargo carriers, nimble private planes!

Just as white stripes guide motorists on the highways today, so there will be guides in the skyways of tomorrow—and radio will "paint" them there.

In the new world, dependable radio equipment by Western Electric will continue to serve American pilots—as guide, traffic cop and weather reporter.

Western Electric

ARSENAL OF COMMUNICATIONS EQUIPMENT

CAB Studies International Air Transport

(Continued from page 13)

countries with respect to United States flag operations to their territories.)

5. Would international commercial aviation be assisted appreciably by the establishment of free zones in states located on important international routes wherein cargo could be unloaded and stored, repair facilities maintained, staff members housed, and the like?

(Landlocked states have benefited considerably from the establishment of free zones located in ports through which their commerce had to pass. If air freight develops as some expect, free zones for such traffic may have a similar importance for states dependent upon routes crossing the territory of other states.)

6. Assuming that many foreign governments will be willing to enter into agreements with respect to commercial air rights only on some basis of reciprocity, what type of agreement would seem most likely to meet the standard of reciprocity without retarding the development of air transportation?

(For example, are directly competitive routes to be established by two countries, or, on the other hand, should an effort be made to place in effect a division of different routes between the nations concerned so as to avoid direct paralleling of services? If this is done, there will be some good routes from which the United States will be excluded in exchange for the privilege of enjoying others exclusively. In commenting, it should be remembered that more than one foreign nation's carriers may seek to operate on the same route. Another phase of this question is suggested by the tendency in prewar negotiations to put limits on total volume of operations which were very low, very rigid, and not easily revised. Should future agreements continue to impose limits on frequency of service and similar matters?)

7. What operating and commercial rights, not specified in response to other questions, will be needed for international airline operations?

(This covers problems which present special difficulties, such as rights to maintain communication service, meteorological service, to keep American personnel stationed in the territory of other states, and the like. Consideration also should be given to the length of time for which agreements should be negotiated.)

8. Should United States air carriers negotiate directly with foreign governments to secure international air transport operating rights, and, if so, to what extent and under what conditions?

(It should be noted that this is not a matter entirely for determination by this country; governments frequently refuse to negotiate on air rights except through diplomatic channels.)

9. To what extent and under what conditions should United States air carriers engage in both domestic and international air transportation?

(This question involves, among other things, the prospective economic magnitude of the foreign air commerce of the United States in relation to domestic air commerce. It raises the question of whether carriers engaged in domestic operations should be permitted to extend their operations into the international field. Conversely, it brings forward the question of whether American air carriers engaged in foreign air transportation should be permitted to have terminals in the interior of the United States when such terminals are major points of origin or destination of trade and travel, as well as whether such carriers should be permitted to engage in domestic air transportation on appropriate extensions of their foreign routes into the United States.)

10. Should the United States develop foreign air transportation mainly through one company or should there be regional companies (perhaps with competition in those regions where traffic warrants), and, if so, what should the regions be?

11. If the foreign air commerce of the United States is mainly carried on through a single company or through regional

monopolies, to what extent, if any, should such a company or companies be governmentally owned, financed, managed, or otherwise regulated?

(Other countries have seen fit for various reasons to subject their international air transport enterprises to a substantial amount of government control through ownership and otherwise.)

12. Should international air transport operations be conducted in whole or in part through internationally owned and controlled government corporations, and, if so, to what extent?

(In addition to other possible far-reaching implications of this question, it would include the possibility of utilizing such international government corporations for providing service on thin-traffic routes and in the territories of the vanquished countries.)

13. Should a permanent international organization be established to (1) formulate international safety standards with respect to flight rules, traffic control, operational procedures, navigation facilities, certification of aircraft airworthiness, or certification of airman competency; (2) control economic matters such as passenger and cargo rates or methods of competition; or (3) establish and operate international airways, international airports, and aids to international air navigation? If such an organization is established, how should it be constituted?

(Obviously, there would be advantages both for international trade in aircraft and for the assurance of at least an adequate minimum of safety in all international air transportation if airworthiness requirements and safety regulations could be uniform all over the world. On the other hand, there are great practical disadvantages in reconciling a multitude of national and individual views to secure such uniformity, and the process of amendment might become intolerably slow and complicated. Comments are desired upon the degree of desirability of uniformity of practice as to safety standards, either in the whole field or with respect to certain basic features, and as to the machinery through which the matter might best be treated. The regulation of rates and other competitive factors presents special difficulties in the international field, illustrated by the history of shipping as well as of aviation.)

14. If an international organization of the kind referred to in question No. 13 is not established: (1) Should conditions be imposed on foreign airmen with respect to compliance with United States safety standards? (2) should conditions be imposed on foreign aircraft with respect to United States airworthiness requirements? and (3) should controls be exercised by the United States over the passenger and cargo rates, competitive practices, and other economic phases of operations of foreign carriers?

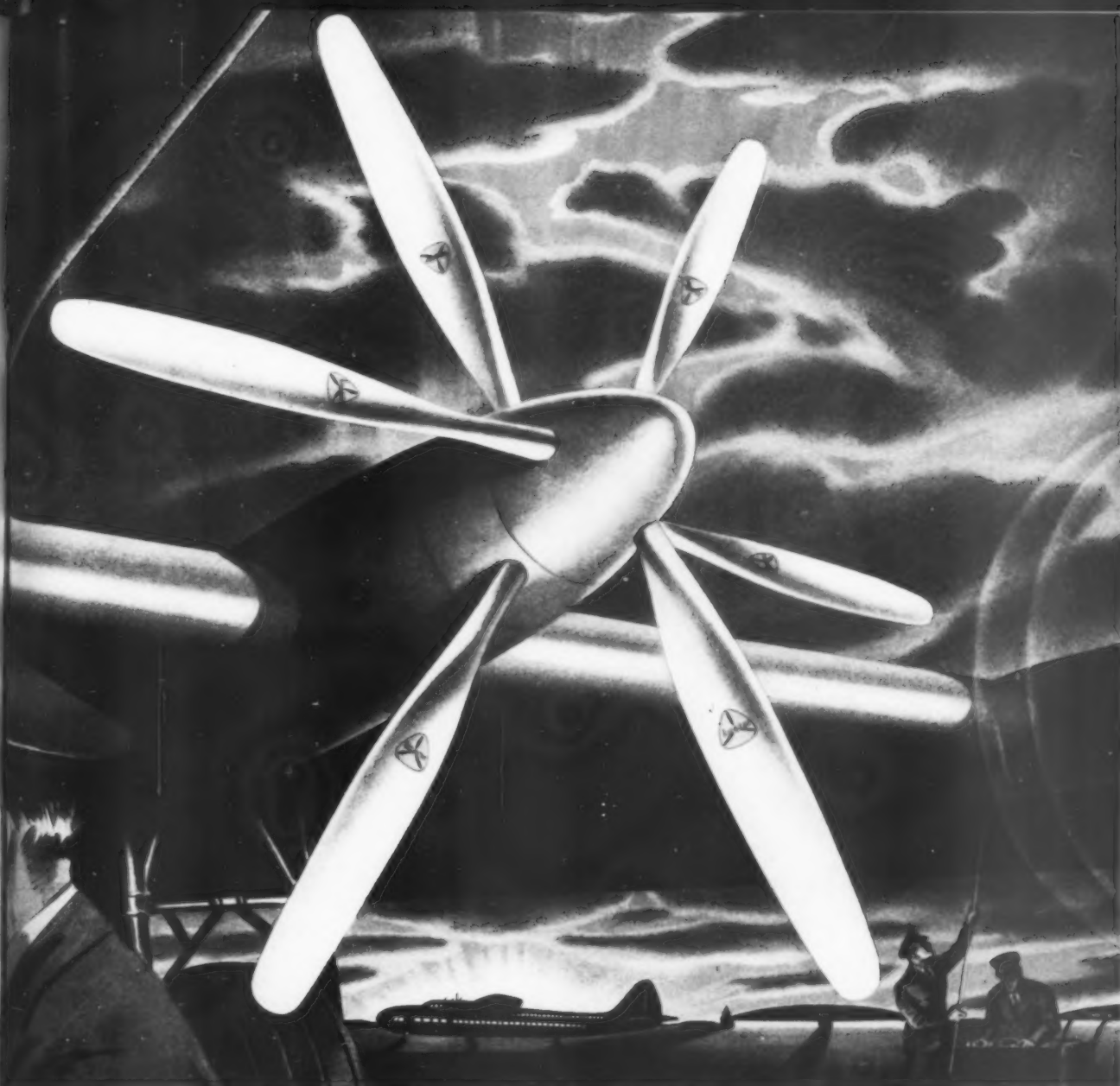
(In considering this problem it should be kept in mind that other nations probably would impose on United States airmen, aircraft, and air carriers conditions similar to those imposed by the United States on foreign nationals.)

15. What disposition should be made of

(Turn to page 55)



Washington Tower Personnel: Control tower personnel at Washington National Airport are shown above in their new uniforms. Left to right are George Clelland, assistant controller; Timothy J. Madigan, controller; Thomas A. Basnight, controller; Wilbur B. Peaire, assistant controller; Richard Stark, chief controller; Paul Moore, controller; Joseph Vivari, controller, and Joseph J. Reino, assistant controller.



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*says E. H. Forsman,
Supt. of Communications for
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Aviation Department Set Up in Minnesota; Airfield Now Assured

A metropolitan airport system was assured for the Twin Cities of Minneapolis and St. Paul when Governor Harold E. Stassen of Minnesota signed into law a bill creating such a system late last month.

Passage and signing of the measure followed within a fortnight of Aviation Day sponsored by Greater Twin Cities chapter of National Aeronautic association, which climaxed efforts in its behalf.

The bill provides for a nine-man commission, four each to be chosen from the two cities and one to be named from an outside community by Gov. Stassen.

Other legislation which passed the law-making group embodies a zoning act, a definitions bill and creation of a new State Department of Aviation to be headed by a commissioner and assistant. Legislation now permits any political sub-division to issue bonds for airport construction and presentation of a state constitutional amendment for expending of aviation gas tax and aircraft licensing money for airport construction.

Minnesota's postwar aviation planning won approval of L. Welch Pogue, chairman of the Civil Aeronautics Board, and William Redding, executive vice-president of NAA.

UNITED AIR LINES reports an increase of more than 12% in revenue passenger miles flown during March as compared with the same month a year ago. United flew approximately 27,088,000 revenue passenger miles in March as against 24,141,413 in March, 1942. This was despite a decrease of over 21½% in revenue airplane miles flown, due largely to the turning over of airplanes to the government for military use. Revenue airplane miles were estimated at 1,717,140 as compared with 2,187,465 flown in March a year ago.

CAB Study

(Continued from page 52)

surplus aircraft owned by the government, suitable or convertible for civil use, and through what governmental machinery?

(This question looks mainly to the end of the war and would include consideration of the possibility of making such surplus aircraft available to air carriers for commercial use, of their possible sale in part to foreign carriers, or to any other methods of disposal that may appear appropriate.)

16. In general, what steps should be taken by government and the industry to facilitate the conversion of aircraft manufacturing to a peace-time basis when the time comes?

(As in the case of other questions, the answer to this one may become more clear at a later date. Any recommendations which can be made at this time will be welcome.)

17. What other problems and recommendations in relation to international air transportation should receive the active consideration of this government?

(Suggestions and recommendations concerning other problems not specifically listed will be most welcome.)

Latin American Airport Chain Nears Completion

Airports every 500 miles or less will soon dot Central and South America and the Caribbean islands, forming a complete chain for aerial traffic linking the United States with the bulge of Brazil, according to L. P. O'Connor of Miami, Fla., general manager of Pan American Airways' airport construction division.

These bases, said O'Connor will serve as "springboards for bombers and transport planes carrying airpower and tons of lend-lease supplies to the allies on the various fighting fronts."

They will serve as emergency landing fields and refueling stops for bombers and military transports as well as the Pan American clippers flying between the Americas, he said.

Commercial Air Loads Increase in January

Statistics compiled from the monthly reports of 18 commercial air carriers disclose that passenger, mail, and express loads during January, 1943, showed considerable increases over the same month in 1942, the Civil Aeronautics Board announces. The report revealed that the carriers flew nearly 4,000,000 miles less in January of this year.

The planes, one of which is an American flag carrier operating in the Hawaiian Islands, carried average loads of 13 passengers, 614 lbs. of mail and 280 lbs. of express, an increase of nearly four passengers, 383 lbs. of mail, and 146 lbs. of express per plane.

Mail pound-miles during the month amounted to 4,681,676,063, an increase of 2,082,762,275 over January, 1942. Express pound-miles totaled 2,137,328,581, an increase of 625,260,932 over the same month last year, said the report.

REA Reports Increased Use of Air-Rail Express

Increased use of combination air-rail express by shippers located at points not directly on airline routes is reflected in figures released recently by the Air Express Division of the Railway Express Agency.

February figures for this type of traffic reveal that of an estimated total of 114,210 air express shipments handled over the nation's commercial airlines in February, 35%, or 29,646, were transported in combined air-rail service. Average revenue per shipment on air-rail traffic was 32% higher than the average revenue of shipments moved exclusively by air, the agency reported.

Gross revenue of so-called "off airline" business increased 113.5%, while revenue from traffic moved exclusively by air increased only 26%. The number of air-rail shipments for February increased 50.6% over the same month a year ago, while all-air shipments for the same period decreased by 26%.

Downward Trend in Air Accidents Noted by CAB

A total of 1,331 non-scheduled carrier aircraft accidents was reported to the safety bureau of the Civil Aeronautics Board during the first six months of 1942, the bureau reports. This is a decrease of 576 accidents as compared with the corresponding period of 1941.

The average number of certificated pilots and student pilots for the period was 212,461 as compared with 154,120 for the first half of 1941, the report stated.

"This average number of certificated pilots and student pilots is used as a basis of comparison, and it is most encouraging to note the definite downward trend in accidents," it added.



AA Meeting: A meeting of all eastern region traffic managers and supervisory personnel of American Airlines was held recently in New York. Shown here, left to right, are Kern Maier, assistant eastern superintendent of reservations and ticket offices; Robert C. Meserve, supervisor of reservations and ticket offices, Buffalo; Richard W. Baker, holding a similar position in Washington; F. J. Robinson, Canadian traffic manager; John C. Freeman, Rochester traffic manager; George C. Wright, Syracuse traffic manager; C. C. Potter, Philadelphia traffic manager; Virginia Denning, secretary; L. J. Boylan, eastern superintendent of reservations and ticket offices; H. J. Lyall, eastern traffic manager; Raoul H. Nehr, Newark traffic manager; Kenneth C. Smith, New York supervisor of reservations and ticket offices; Herbert D. Ford, Washington district traffic manager; G. W. Hawes, Buffalo traffic manager; M. Shipley, Philadelphia supervisor of reservations and ticket offices; Bradford S. Gibson, New York dtm; I. A. Williams, station field supervisor, New York; G. M. Curry, eastern mail-express-freight superintendent; Joseph E. Terry, New York traffic supervisor; Willis G. Lipscomb, New York general traffic manager; A. L. Emery, Baltimore traffic manager; Robert M. Burrows, northern superintendent of station operations, and F. G. Malbeuf, eastern publicity director.

"Standards" Suggested for Regulation

Writer Questions 'Legal' Regulations; Paperwork Decried

By E. J. FOLEY

LIKE death and taxes, the governmental regulation of the air transport industry is a pretty sure thing. We like to think of this regulation as a basically sensible precaution of a government interested in protecting its airline standards of safe travel against haphazard invaders.

There are several possible roads which lead to a well-regulated status for the industry. The short, if doubtful, road of self-regulation is one extreme; the long, legal road strewn with the detours of interpretation is the other. A practical mid-

length course based upon appropriate standards, the maintenance of which will be assured by regular inspection, is an attractive—if possible—solution.

In discussing this subject, we state emphatically that our goal is not reform. It is neither our purpose nor prerogative

to criticize or praise the existing civil air regulations. Accordingly, let us assume that we have no civil air regulations; that we are simply theorizing on possible forms that such a program could take. We shall consider the problem involved in regulating the airlines, and contrast an unfortunate possible solution with an appropriate answer which we think practical.

Let us take a look at the problem. The air transport industry is an expansive business, almost infinite in the number of variables encountered in operations. Types of operation are several; the equipment to be operated covers a wide range of sizes, powers, etc. The technique of flying is a variable and maintenance procedures are flexible; these statements are factual even for the same transport aircraft. Communications practices may well depend on the route. All in all, the gap is tremendous between what *must* be done to operate an air transport service and what *should* be done to assure a closely-knit, on-schedule airline operation.

A few of the manifold complexities involved in "regulating" the industry are apparent in the above. It is a large order to attempt to promulgate a code which will guarantee the maintenance of top-notch standards by all participants wishing to qualify in the field. Our end product must be comprehensive enough to cover to the same reasonable degree all of these variables. Any idea of legislating in detail each possible situation is patently absurd. Yet we see no insurmountable obstacles to the development of such a program on a sound basis.

The purposes in the development of such a code for the industry are, presumably, to protect the public interest in the safety and efficiency of airline operation, and to foster the development of the field. We think it logical to say that the airlines have an inherent interest and financial stake in these same purposes. They are, in most cases, fully cognizant of their service responsibilities. They are quite as sincere and enthusiastic in their efforts to attain and maintain a high calibre operation as is any regulatory body. We think it flatly denied and long-since disproven that the familiarity of the operator with every phase of his operation breeds any standard-lowering contempt.

Liberal Restrictions

Moving in upon the actual development of such a program, we see its necessarily broad scope and our reaction may be to attempt to cover every detail generally. This is a recognition of the absurdity of pinning down every possible situation in detail but as an approach to the solution of our problem, it may backfire. The product of such a program may be a series of "liberal," compromised, legal restrictions. On perusal they may seem proper and fair but in the intricacies of interpretation which we have built into them, they may be unnecessarily and unintentionally burdensome to the "regulatee."

Why? Because in our efforts to be comprehensive we have left so many points open to personal interpretation as to force the operator to bend over backward. He may have no choice but to do so when he considers the potential violation to which he is exposed if he makes any but a letter-of-the-law interpretation of the regulation.

To assure compliance with such a program, we might devise multicopy forms which will keep us posted on how literally the operators are interpreting our rules, and simultaneously give us a periodic progress picture of the airlines. Such reporting is simply written confirmation of the operator's adherence to the rules and would normally cover such general categories as failures, troubles experienced, and modifications and revisions.

We cannot prove that there never has

been nor never will be need for such a type of regulation of the air transport industry. However, our personal feeling toward it is definitely negative. It strikes us as more essential to the normal healthy airline progress that our code be practical and appropriate rather than legally involved in phraseology, and requiring of interpretation in text.

In trying to evolve a more appropriate type of regulation than that above, we believe the accent should be upon standards and limitations, and that the technique of enforcement should be periodic inspection on the part of the regulator rather than paperwork on the part of the industry. With specific reference to this latter item, the time that might have been spent in "form compliance" may be better applied to efforts at solving the problems, either alone or in close liaison with the manufacturer.

We have mentioned the operators' realization of what is required of them. Further, we may add that the very nature of airline work is so unforgiving of any neglect as to be a constant, pin-pricking reminder of what must be done and done perfectly. However, this is not in itself a guarantee that all candidates for airline operating certificates will be so aware, and assure all phases of perfection prior to their entry. Accordingly, the need for a code still exists and the coming-of-age of certain operators is no assurance of the maturity of the entire industry.

Same Requirements

The standards of performance, we suggest, might be established for several different types of operation and yet in many respects their requirements would be identical. The foundation for such standards might be set upon the license-qualification of the appropriate airline employees, and the development of a specific program for the functional rating and qualifying of such operating elements as repair stations, communications facilities and so on.

If licensing of men is to be a partial basis for our code of standards, the license really has to mean something. As a source for determining just what a significant license is, it would seem that joint planning by established recognized air carriers and the regulator could develop a sound system. The same significance must accompany a facility rating, and the same source should be effectual.

To take an example, illustrative if not too precise, let us say that our standards provide that an airline operating blank miles per aircraft per day over a properly certificated route shall perform such and such service every blank hours of operation. This last factor is a standard, jointly established by operator and agency. Further, our standards provide that a certain minimum number of men, significantly qualified by experience and really licensed, shall man each component service shop, and that specified capacity and type equipment shall be required in each shop as a qualifying standard for the type and extent of work to be done therein. These standards, too, should be determined by liaison between the interested parties.

The application of these standards plus the corresponding ones in the several

(Turn to page 67)



Foley



Bomber Equipment:

The features of high impact strength, resistance to temperature changes and ease of cleaning are said to have contributed toward the selection of Celanese Celluloid's Lumarith for these bomber salt, pepper and sugar dispensers of unusually light weight. Refilling is permitted through the screw bottoms. Molding is by American Molded Products of Chicago for Helmco Inc., 1215 W. Fullerton Parkway, Chicago.

New Thermometer

An entirely new thermometer claiming the incorporation of every new improvement in glass thermometers, is announced by the American Schaeffer & Budenberg Instrument Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. Originally designed to conserve the critical copper used in cast bronze cases, this new model includes several interesting features: back, side and oblique angles may be furnished without using a ball joint; the pressed-steel case has been reinforced to add structural stiffness; 100 hours in salt spray has initiated no corrosion on the black suede finish of the case. The weight of the unit has been reduced by about 1/3 through this redesign; yet, the instrument fully meets Navy spec 18-T-7. The scale is black with yellow figures; the tube is red-reading mercury.

Voltage Tester

This new Model 590 Voltage Tester, which according to the maker, reads like a thermometer is the product of Superior Instruments Co., 227 Fulton St., New York, N. Y. It weighs 5 ounces and measures 1 3/4" wide, 1 1/2" deep and 5" high. Automatic indication is claimed as follows: A-C or D-C; 110, 220, 440 or 660 volts; if the appliance in the line is "open"; 25 or 60 cycle; excessive leakage between motor and line. The Model 590 is said to draw less than 1 milliampere of current. Complete with test prods and instructions, the unit sells for \$5.85.

Turco Makes Automatic Oil Radiator Cleaner

Announcement that the automatic machine for cleaning aircraft oil radiators, used so successfully by TWA maintenance, will be made available to all aircraft depots was made recently by Ray Sanders, General Manager of Turco Products, Inc., 6135 S. Central Ave., Los Angeles.

This surge washing machine was first invented by Clarence C. Melton of TWA and Turco has obtained rights from the airline to manufacture and distribute the machine. It is said that the device, for the first time, assures removal of sand, metal particles and insoluble matter from the radiators.

The machine consists of a 42-gallon reservoir for the Turco Penetrol solution used; a one-cylinder pump operated by a 1/3 hp. motor (electric) by a "V" belt; two pivoting cradles to hold the radiators and a ratchet and pawl mechanism to revolve the cradles.

Time-Delay Relay

A new Time-delay relay, specifically designed for aircraft applications where time-delay drop-out is required, has been announced by General Electric Co. The two available sizes provide up to 0.4 second time delay and up to 0.3 second. On many installations the relay may be used directly to control the desired device, while on others, it may be better to have the relay actuate a contactor.



Channel-Tread: C. W. Shaul, Akron, O. is shown here with one of the newly devised channel-tread tires, the product of Goodyear Tire and Rubber Co. where he is employed as a supervisor. The evidently higher sidewalls are claimed to give more "floatation" or surface "purchase" and hence offer less possibility of sinking. Originally adapted for the P-39, these tires are now being applied generally as tail wheel tires because the lower air pressure permits heavier loads without the normally attendant dangers of the tail wheel sinking in mud or sand.

The normally closed, double-break, silver contacts of the relays will carry 20 amps continuously up to altitudes of 40,000 feet above sea level. Coils can be furnished for 12 or 24 volt operation.

A SALUTE TO THE TEST PILOTS OF AMERICA

Aviation owes so much to so few! For their intrepid venturing where none ventured before.... for their disregard of personal dangers.... for their sound technical knowledge from which aviation has profited so greatly.... Pioneer Parachute Co. pays tribute.... as one pioneer to another, a salute to this brave clan.



Anthony "Tony" LeVier
Test Pilot for Lockheed Aircraft Co.

"Tony" is III. He began flying at 15 and has 3000 hours to his credit. He won the Grieve Trophy in 1938, and came in second for the Thompson Trophy in 1939. He has operated flying schools and was test pilot for General Motors before he came to Lockheed. "Tony" is "tops". We salute you, Tony!

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Mfrs. Need Big Reserves for Postwar Conversion—Damon

FINANCIAL reserves established during the war by the aircraft manufacturing industry for postwar conversion, development and construction should be eliminated by price adjustment boards in determining "excess" profits, according to Ralph S. Damon, president of Republic Aviation Corp.

Asserting that "we are determined that there be no repetition of the aviation postwar picture which followed World War I when it might be said that the aviation industry was allowed to go into bankruptcy en masse and nobody seemed to care very much except, naturally, those in the industry," Damon told the Harvard Business School Club of New York on Apr. 29 that present practices discourage and penalize initiative, economy and reserves for peacetime conversion and development.

In his second important speech within six weeks, Damon also warned the government to stay out of postwar aviation manufacturing. Pointing out that many plant facilities are now owned by the government, he urged the Defense Plant Corp. to announce now its policy to rent under terms or dispose of by sale such properties promptly after the peace.

Partial text of Damon's speech follows:

"It was my very good fortune, as a member of the Aircraft War Production Council, to visit within the last two weeks ten aircraft plants in all parts of this country, and I can assure you, from my observation, that Donald Nelson's recent statement that our April production of airplanes might reach 7,000 is no idle jest. I was in plants—day shift and night shift—and to anyone who doubts our ability or sincerity or our production—I give the lie. I have seen airplanes for years, but I never saw so many in so short a space of time. It is no wonder that the aviation industry, which ranked 44th in dollar value of production in 1939, the year war broke out, today ranks first place.

Lauds Concentration

"Much of our effectiveness has been due to a concentration of production types. Both the Army and the Navy, while continuing experimental models in even greater quantities than ever before, are narrowing down their production types to the few best numbers in each field, permitting greater standardization both in the production shops, the personnel training and maintenance fields, and in simplification at the fighting fronts. The Boeing, Douglas, Vega concerted action on the Flying Fortress is a good example. Another is the Consolidated and Ford concentration on the Liberator.

"One of the greatest feats of aviation in this war has not been on the fighting front, but in getting to it. The work of the Air Transport Command in ferrying airplanes across oceans to save time and shipping; the evacuation of wounded and sick from fronts, the rapid transport of urgently needed spare parts and supplies

to our war theatres all over the world, to Alaska, New Guinea, and to Casablanca and to China, are part of a story which, when it can be told, will rank with the epics of all time. General Arnold's rush return from Australia to California in 35 hours is but an example, and I am told that that short time is no longer a record. One pilot who ferried a plane from North America across the Atlantic caught a prompt return ride, and landed back at his base on this side less than 24 hours after his departure. A round trip to Europe in less than a day.

"These exploits and the tremendous research going on currently augur well for our peace time utility of the air. Within a few years after the peace, and provided we can have some semblance of freedom of the air on an international basis, we should be able to put to the commercial and happy uses of mankind this great juggernaut of war. The great air bases necessary and the facilities for collecting and disseminating weather information, the technical personnel necessary for piloting, navigating, maintaining and dispatching will have been trained.

Airlines To Expand

"I believe that the expansion of our air transportation system will begin immediately after the signing of the peace or as soon thereafter as the various peace lines can acquire new and additional equipment. Without divulging any military secrets, it is safe to assume that we now have 25 times as many good airports as we had when we entered the war. Many are in faraway parts of the country located close to or in rural communities which have never had the advantages of being served by air. Naturally we can presume that at the conclusion of the war when these fields cease to serve the military exclusively that these rural communities will advance and prosper by being able to be in closer touch with the rest of the United States and the world by air. We have seen the social life of various rural communities advance through the development of the automobile. As the



CW's British Office: Shown here in Curtiss-Wright Corp.'s British office are, left to right, Lisle M. Nixon, of the company's propeller division; Col. J. S. Griffith, commanding officer of the factory representatives' detachment, and D. C. Eaton, field engineer of Wright Aeronautical Corp. Representative of the company's airplane division was not present when the picture was made.

good roads program expanded, communities were brought much closer together; they had ready access to the metropolitan cities and that was to their advantage. It goes without saying that what the good roads program did for the automobile, our expanded airport system will do for the airplane. The time is not too far off when the remote portions of America will cease to be remote. The performance of the Air Transport Command has demonstrated that there is no longer a really isolated spot on any of the five continents of the world. If the airplane can so reduce the world, then our domestic airlines, aided by good landing fields, will have no difficulty in proportionately reducing the United States.

Problem Twofold

"The problem will be twofold, one of supplying flying equipment suitable for safe peace time travel when the hazards taken in war will no longer be accepted. The other problem will be the integration into commercial structures of the released military personnel so that the American way of life for which we are fighting may be fully preserved.

"On the first problem, mechanically we can do the job and one transport seating nearly three times the present standard air transport has already flown and other larger ones are under construction. By utilizing all our supercharging knowledge cruising speeds in a few years after the peace should approximate three hundred miles per hour and within the next decade go up to four hundred. The biggest problem will be financing the development.

'Sad Story'

"We in aviation are anxious to assist in realizing a practical air program for this country. Lest we be accused of being motivated simply by selfish and ulterior reasons, let me briefly give a picture of what we had to contend with in the past. I do not have to elaborate on the sad but true story of aviation prior to this war, how it had been neglected, kicked around and allowed to become practically dormant. That story has been repeated time and again. However, just to freshen your memory, may I note that I mentioned earlier that in 1939 aviation manufacturing, including the business done by the various parts and aircraft engine companies ranked 44th among the industries of this country. Not wanting you to feel too discouraged over the neglect given aviation, I will only extend my figures back to 1933 and unless we unjustly condemn those in power since, I point out that the picture was quite similar before that time. In 1933 military funds were appropriated allowing the Army to purchase 285 airplanes. In 1934 the Army was given money to buy only 88 airplanes and as late as 1939—the year war in Europe was declared, Army funds were available for 373 planes. In 1933 similar figures for the Navy were 133 planes, in 1937 only 108 planes and again in 1939—the year war was declared, only 343 planes.

"We are determined that there be no repetition of the aviation post-war picture which followed World War I when it might be said that the aviation industry was allowed to go into bankruptcy en masse and nobody seemed to care very much except, naturally, those

(Turn to page 68)

M.A.P.

MIDWEST AIRCRAFT PRODUCTS

FOR VICTORY



PRODUCTS IMPORTANT TO THE AIRCRAFT INDUSTRY

M. A. P. production lines today are concentrating on the manufacture of **Oil Dilution** and **Primer Valves**—both Electrical and Manual.

M. A. P. precision workmanship, backed by previous experience, represents our not unimportant contribution to the war program.

And when peace comes, too, M. A. P. shall still be importantly in the production of Aircraft parts and accessories. Engineering toward that end is going on NOW.



**MIDWEST
AIRCRAFT
PRODUCTS, Inc.**
DAYTON, OHIO

Birthplace of the Airplane

LET'S ALL BUY MORE
WAR BONDS & STAMPS!

Irving Taylor Joins Douglas Co. on June 1

Irving Taylor, widely known figure in aviation, has submitted his resignation as general manager of the Aeronautical Chamber of Commerce of America—a post he has held since 1939—and will become associated with Douglas Aircraft Co., Santa Monica, Cal., on June 1.



Taylor

In his new connection, Taylor will be assigned to and work directly out of the home office of the company at Santa Monica, and will handle special assignments, according to A. M. Rochlen, director of the industrial and public relations division.

Taylor's experience prior to association with the Aeronautical Chamber included service at home and abroad with the U. S. Department of Commerce's Bureau of Foreign and Domestic Commerce as trade commissioner and commercial attache. During the 1930s he was in charge of European market analysis and sales control.

United Aircraft's 3 Months' Profit Totals \$4,050,749

Shipments of United Aircraft Corp., East Hartford, Conn., for the quarter ended March 31 amounted to \$159,169,553, the company announced.

Net profit was \$4,050,749, equivalent to \$1.40 per share of common stock on 2,656,691 shares outstanding, after provision for dividends to that date on preferred stock, and is subject to renegotiation.

These profit results were after provision for Federal income and excess profits taxes estimated at an over-all rate of 80% of taxable income, less the post-war refund of excess-profits tax. "Provision for transformation to post-war conditions has been established in an amount equivalent to such post-war refund," the company said.

Practically the entire output is being delivered this year to the U. S. Government, and profit margins will be somewhat lower than last year when considerable production was under British contracts.

President Eugene E. Wilson advised stockholders United has followed a policy of holding its earnings steady during the war period, and indicated this year's earnings will be similar to the 1942 figure of slightly over \$17,000,000 which was equivalent to \$5.95 on the common.

Ad Firm Makes Parts

Many of the General Outdoor Advertising company's metal work shops are filling subcontract orders for small airplane parts, according to Burnett W. Robbins, president. Current subcontract orders approximate \$1,800,000, he said.

Tiny Plant Gets 'E'

An inconspicuous two-car repair garage in Cos Cob, Conn., which, since Pearl Harbor, has been turning out important airplane parts under the name of Diamond Hill Machine Shop, has been awarded the Army-Navy "E." The award was made to Harold C. Powers, proprietor, April 16. James V. Forrestal, under secretary of the Navy, and Representative Clare Booth Luce spoke at ceremonies attracting 2,500 residents of the tiny community. "This demonstrates once more that mere bigness is not the only criterion of industrial accomplishment," said Forrestal.

Fisher's Cleveland Plant is Completed

Completion of the Fisher-Cleveland aircraft plant for mass production of bombers at Cleveland, O., by the Fisher Body division of General Motors Corp. was announced recently.

Fisher Body plans to operate the plant and build complete bombers, and also will fabricate major parts and sections for other manufacturers of the same plane.

The project was described as one of the largest undertaken in the aircraft field by any automobile company. Engineers who erected the building under direction of the Army Corps of Engineers, said the fabrication section is the longest span flat-slab concrete structure in existence.

Fisher officials emphasized that completion of the plant does not mean early production of complete planes, since tremendous tooling is required.

Solid Landing

A story too good to pass up appeared in a recent edition of the *Boston News Bureau*. It is reprinted herewith without comment: "A certain flying instructor in Kansas City has to put up with a good deal of kidding these days as the result of a parachute jump.

"Recently he and one of his students were up in a training ship. The student, well advanced in his flying, was doing good work and the instructor, in the rear cockpit, dropped off to sleep.

"Upon completion of the flying period, the student returned to the field, landed without disturbing the instructor, rolled the ship into the hangar, and walked off, leaving the instructor sleeping.

"Sometime later, he awoke and was startled to find no student in the front cockpit. The silence told him the motor wasn't running. In his sleepy state, he thought the motor had quit and the student had bailed out. So he rolled hastily over the side of the plane, pulled the rip cord on his parachute, landed on the concrete floor of the hangar and broke his collar bone."

Cohu Heads National, West Coast Councils

LaMotte T. Cohu, chairman of the board of Northrop Aircraft, Inc., on May 1 took over



Cohu

the dual roles of president of the newly formed National Aircraft War Production Council, Inc., and president of the west coast industry's original Aircraft War Production Council, Inc.

As head of the national council, he succeeded Glenn L. Martin, president of the

Glenn L. Martin Co. of Baltimore, becoming the first full-term president under a rotating system which provides for the election of a new president on the first of each fourth month. Martin served from the time of the organization of the council on Apr. 13 to May 1.

In accepting the top spot of the West Coast AWPC, Cohu succeeded Robert E. Gross, president of Lockheed Aircraft Corp., under a similar plan of rotation. T. Claude Ryan, president of Ryan Aeronautical Co., was named vice-president of the West Coast council.

J. Carlton Ward, president of Fairchild Engine & Airplane Corp., became president of the East Coast AWPC, and Lawrence D. Bell, president of Bell Aircraft Co., became vice-president on May 1. Ward succeeded Martin in that post and also serves as a director of the national council. Bell is vice-president of the national group.

Offices of the national council will be in the American Building, 1317 F Street, N. W., in Washington, under the direction of Frank Ford Russell, general manager.

Kellett Autogiro Corp. Selects New Directors

Y. R. Yarnall, formerly with the Bellanca Aircraft Corp., Newcastle, Del., and H. H. Savage, Philadelphia attorney, were elected to the positions of treasurer and secretary, respectively, of the Kellett Autogiro Corp., Philadelphia, at a regular meeting of the board of directors. W. W. Kellett, president, announced recently.

Yarnall was vice-president and treasurer of Bellanca Aircraft until March 23, 1943, when he resigned to work as comptroller of that company. Prior to working with Bellanca, he was associated with the Equitable Trust Co., Wilmington, Del.

H. H. Savage has been the head of the Legal department of the Kellett company for the past two years. Prior to this he served with the Legal department of the American Gas Co. and the Philadelphia Electric Co.

William F. Palmer, secretary and treasurer of the Kellett Autogiro Co. since 1929, resigned recently and is now associated with the Luscombe Aircraft Co., West Trenton, N. J., in the same capacity.

NORTH AMERICAN SETS THE PACE

... in Tunisia

(One of a series reporting North American planes in action on the battlefronts of the world)



ESCAPING AXIS SUPPLY SHIPS UNDER ATTACK BY B-25 BOMBERS OFF THE TUNISIAN COAST

B-25 MITCHELL BOMBERS BREAK HITLER'S GRIP IN AFRICA

"In relay attacks, hour after hour, B-25 Mitchells hit docks and shipping at Sousse, on the east coast of Tunisia . . . The important railroad junction at Hammamet was pounded hard by B-25's . . . Mitchell bombers raked the Tunisian railroad along which Axis troops and supplies have been arriving . . . An aerial cover of Mitchells and fighter planes protected the Americans advancing on Gafsa and tortured the fleeing enemy . . ."

Dozens of stories like these have come out of Tunisia. They place the North American B-25 Mitchell bomber high on the list of causes for breaking of the Axis grip in North Africa.

Now the enemy's power in Africa is broken. Soon the Mitchell and other great American planes will be over Southern Europe and another front will be added to those on which "North American Sets the Pace."

This pace-setting begins in our plants, where thousands of men and women work night and day to make North American

bombers, fighters and trainers better, and to turn them out faster. Wherever our planes are fighting, trained North American employees go along to find out how they perform. Reports from these field experts have resulted in many improvements that are aiding the United Nations around the world.

Here at North American we're learning a lot of things about air-planes that no one ever knew before. Things that will help end the war sooner. Things that will help make the peace more lasting.

NORTH AMERICAN AVIATION, INC.

Inglewood, California
 Kansas City Dallas
 Member, Aircraft War Production Council, Inc.

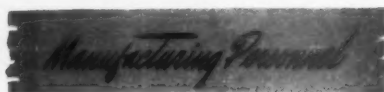
B-25 MITCHELL

P-51 MUSTANG

AT-6 TEXAN



NORTH AMERICAN
Sets the Pace!



Persons



Agerter



Willis



Bellande



Girvin



Chappellet

G. G. Sherwood, treasurer of Henry J. Kaiser Co., has been elected a director of Brewster Aeronautical Corp., succeeding E. E. Trefethen, also associated with Kaiser.

John H. Moore, formerly western New York field representative for the training-within-industry division of the War Manpower Commission, has been named director of training of Bell Aircraft Corp.

Albert Sharp has been appointed manager of the inspection department of the Dowty Equipment Corp., Long Island City, N. Y., plant. He was formerly chief gage inspector.

Elden Carl, formerly industrial relations manager at Solar Aircraft, has been appointed industrial relations director for Adel Precision Products Co., Burbank, Cal., succeeding **Robert S. Furst**, now assistant to President H. Ray Ellinwood, in charge of institutional advertising and public relations.

Ralph Hemphill, president of Aero Industries Technical Institute, Los Angeles, has been in Mexico City to open a school for specialized training in Diesel engines. **Roy Hemphill**, general manager of Hemphill Institute of Technology, and **J. A. Zertucke**, director of Latin-American training division of Hemphill Schools, are helping set up the new division.

Edward A. Bellande, test pilot, has joined AirResearch Manufacturing Co., Los Angeles, as flight research engineer to specialize in development of high altitude equipment.

Goodyear Tire & Rubber Co. announces appointment of **Earl L. Mefford**, formerly New York district manager, as head of its office in Washington, D. C., to coordinate company's activities there.

Hugh Willis, formerly chief research director of Sperry Gyroscope Co., Inc., has been appointed general sales manager in line with Sperry's belief that sales personnel must also be highly trained technical people. **Walter F. Titus**, formerly with International Business Machines Corp. is new general plant manager.

Thomas R. Brady is new factory manager for American Propeller Corp. at Toledo, O. He was production manager at Caldwell, N. J., plant of Curtiss-Wright Corp. propeller division for four and one-half years. American Propeller also announces appointment of **Joseph H. Broszek** as supervisor of material control. He

previously held same position with Curtiss-Wright.

Andrew F. Halduck has been elected by Bellanca Aircraft Corp., New Castle, Del., board as vice president in charge of engineering.

Hamilton Standard Propellers Division of United Aircraft Corp. has appointed **George R. Corey**, former chairman of industrial relations council of Pawtucket Business-Chamber, as personnel director of its Pawtucket, R. I., plant.

Walter J. Dreves of Glenview, Ill., has resigned as factory comptroller for Sears, Roebuck & Co., to become vice president and comptroller of Elastic Stop Nut Corp., Union, N. J.



Dreves



Sharp

Fairchild Engine & Airplane Corp. announces appointment of **W. M. Kimball**, aviation writer and editor, as editor of "The Pegasus", company publication, and assistant to Joseph E. Lowes, Jr. Kimball fills post vacated by **Charles H. Gale** who is now with Hill & Knowlton in Cleveland.

Recent promotions and appointments at Ryan Aeronautical Co. include: **Mel Thompson**, service manager, made assistant to Eddie Molloy, vice president in charge of manufacturing; **Ray Clever**, replacing Thompson; **John Van der Linde**, upped from night superintendent to foreman of newly-organized assembly department; **M. W. "Buck" Kelly**, made night superintendent; **J. E. Cooper**, formerly with Consolidated Vultee, made assistant to Production Superintendent **E. A. Moore**; **J. T. Zihlman**, formerly of Goodyear, now assistant to Factory Manager **G. E. Barton**; **W. Dow Woodward**, previously with Curtiss-Wright, now contract coordinator under **Walter Locke**, Ryan's contract administrator; **Travis**

Hatfield, former Seattle pitcher, as director of athletics and recreation.

Henry F. Schippel, tire engineer, has been assigned to special engineering duties with aeronautical division of R. F. Goodrich Co., Akron, O., after a year in Africa as project engineer in charge of rubber products at repair and maintenance bases.

Harry M. Shealey, former manager of Glenn L. Martin plant at Omaha, has assumed duties as assistant vice president in charge of production for Globe Aircraft Corp., Ft. Worth, Tex.

Lockheed Aircraft Corp., Burbank, Cal., states that **Cyril Chappellet** was elected vice president of Vega Aircraft Corp. but retains his post as vice president of Lockheed. He resigned the secretaryship of Vega in favor of **Louis Wulfekuhler** to accept the Vega vice presidency.

E. Robert Isbell has been appointed division manager of The Aviation Corp., Toledo, O., in charge of its subsidiary, American Propeller Corp., and of its Liquid Cooled Engine Division, after several months as coordinator of plant construction and organization.

Harry Agerter, formerly aeronautical consultant with WPB and sales manager of Ercoupe, is the new general manager for Van Nuys, Cal., and Wichita, Kan., plants of Aircraft Components, Inc., according to announcement by President **Gilbert G. Budwig**. **C. C. Girvin** is production administrator at Wichita and **J. P. Persons** is works manager.

Paul Rankin has been appointed head of all of the Crystal Laboratories of Aircraft Accessories Corp. **Jack Gregath** has been promoted to superintendent of the laboratories.

Larry Martin has been appointed head of the experimental department at Ryan Aeronautical Co., San Diego, Cal. **Mrs. Esther Long** has been appointed women's counsellor of the Ryan company.

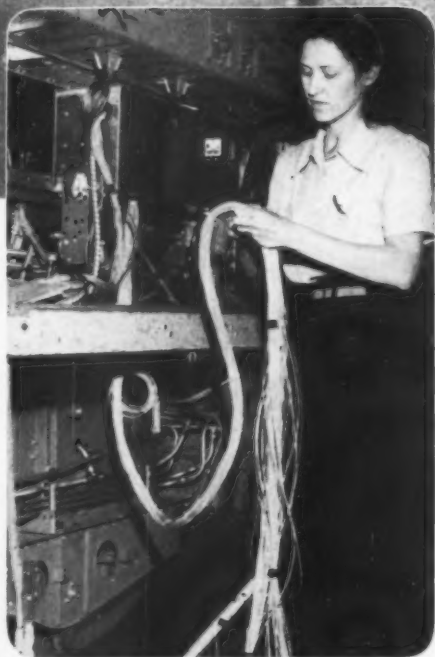
W. Austin Campbell, former Los Angeles, Cal., advertising and public relations executive, has been named manager of the public relations department of the Timm Aircraft Corp., Van Nuys, Cal.

Peter Altman, formerly director of the manufacturing research department of Vultee Aircraft, Inc., has formed a consulting and development service with offices in Detroit, Mich.



Maker of Air History—

The North American B-25



Part of the wiring assembly of North American's B-25 Mitchell Bomber.



Wiring the pilot's switch box. Altogether, miles of wire are used on the B-25.

ANOTHER PLACE

WHERE BELDEN WIRE GOES TO WAR

These swift, deadly B-25 Mitchell Bombers, built by North American, are active above all the world's major battle fronts. The fourteen-ton giants have unloaded bombs on the enemy from Tokyo to Tobruk—from Russia to New Guinea.

Here is another example of the way American ingenuity is winning the war. Here skilled workers, using service-tested materials, have produced a weapon that stays "on the job." Here is another place where Belden wire goes to war!

Back of Belden aircraft wire is a lifetime of experimenting and testing—collaboration with aircraft engineers since flying was in its infancy. This vast experience makes possible the Belden wire that meets today's needs.

Belden Manufacturing Company
4691 W. Van Buren St., Chicago, Ill.



Awarded the U.S. Treasury Special Citation of Merit
for initiating the War Bond-or-Cash Dividend Plan

Belden *Aircraft* **WIRE**

Starter, Lighting, and Instrument Cables ∨ ∨ ∨ SPARK PLUG WIRES

Boeing Reports \$5,238,000 Net; Prepares for Postwar Work

The Boeing Airplane Co., terming 1942 the "most outstanding year in the company's history" with deliveries of Flying Fortresses increased eight-fold, reveals in its annual report that a vigorous policy has been adopted to prepare for postwar operations.

While continued stress will be laid on engineering and production improvements in the output of warplanes, the statement to stockholders by President P. G. Johnson disclosed that active steps already are being taken to put Boeing immediately in line for civilian production when the war requirements are filled.

Research in aircraft design as well as studies of possible non-aircraft products which could be developed by the company's engineering talent and manufactured by its facilities are being conducted by a special division of the Engineering department, Johnson said.

Additional research studies, market analyses and surveys are being conducted by an independent agency. "These studies have been undertaken," Johnson added, "to better equip the management with information on which to base the important decisions that will confront the company in the postwar future."

To Buy Facilities

As a part of this plan, he pointed out that Boeing Aircraft Co. has negotiated with the government for acquisition of the government's interest in facilities which cost \$7,769,363. These facilities principally consist of a factory and office building at the main Seattle plant, together with machinery and equipment.

"In the opinion of the directors, the acquisition of these facilities by the company is necessary to provide the company with an integrated plant for future operations," the report stated. A conservative national campaign of institutional advertising will be continued as part of the postwar projection. "Its objective," said Johnson, "is to acquaint the public with

the company's accomplishments and with its varied engineering and manufacturing talents and experience which will be reflected in any future product to be offered for sale under the name of Boeing."

Relative to the 1942 record, the report pointed out that deliveries increased even more than the dollar volume of sales would indicate. More than eight times as many Flying Fortresses were delivered during 1942 as during 1941. The 1943 schedules call for still further increases, which the management said it is determined to exceed.

Plants Completed

At both the Wichita Division and the Renton Division (on Lake Washington, near Seattle) new plant facilities were completed during the year with Defense Plant Corp. funds. Improvements at Seattle included construction of a new wind tunnel and advanced research aerodynamic laboratory for the company's own account. Boeing Aircraft of Canada, Ltd., at Vancouver, B. C., made deliveries under "substantial contracts" for the Canadian government, operating four production plants, the principal one being a new plant wholly-owned by the Dominion government.

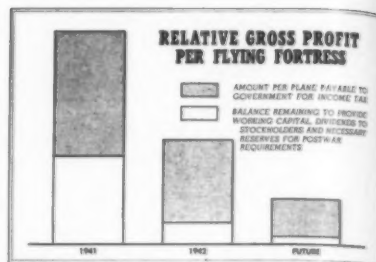
Engineering activity reached a new high level during the year, Johnson said. Two new experimental designs of the Flying Fortress were completed and test flown, and a contract was negotiated for a third experimental type. Scheduled for completion this year were "one of the most modern and complete wind tunnels and aeronautical laboratories in the aircraft industry," and the program calls for a variety of new and vital research projects this year.

Taking note of employment problems, the report said that at present approximately 45% of the employees in manufacturing departments are women. This was stepped up from a figure of 2.6% in March, 1942.

The report presented a significant breakdown of income and disbursements showing the following disposition of gross income: Payments to vendors and subcontractors for materials and parts, 59.73%; wages and salaries to employees, 27.70%; salaries of officers, .05%; insurance, utilities, fees, advertising, etc., .93%; wear out and amortization of equipment, .25%; provision to cover indeterminate expenses resulting from wartime conditions, and adjustments arising from acquisition of government's interest in facilities and possible further refunds, .81%; taxes to U. S. government, 8.72%; state and local taxes .47%; net profit 1.34%; dividends to stockholders .28%; balance of stockholders' share reinvested in business 1.06%.

\$9,300,000 Refund

In renegotiations with the War Dept., the company said it called attention to "the costs incurred by the company in the development of four-engine aircraft; the denial of access to foreign markets for the company's products; the many years involved in the development of the company's products during which the stockholders received little or no return on investment." A refund of \$9,300,000 with respect to 1942 was agreed upon.



Directors set aside \$2,500,000 for 1942 as a reserve for possible future contract adjustments and indeterminate expenses arising from the war. The 10% of excess profits tax returned by the government in the form of a non-interest bearing bond will be set aside as a funded reserve for development of postwar products and markets.

Gross sales for 1942 were \$390,320,000, compared to \$97,210,000. Net profits after taxes decreased from \$6,113,000 in 1941 to \$5,238,000 in 1942.

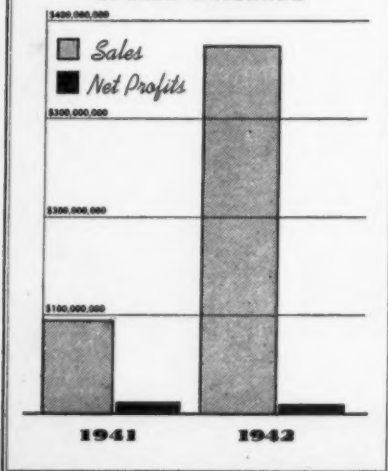
The balance sheet for Boeing Airplane Co. & subsidiary as of Dec. 31 showed: assets \$136,519,115. Current assets were \$117,422,564 including cash \$41,751,969; accounts receivable (less portion of fees on cost-plus-a-fixed-fee contracts retained by U. S. until completion of contracts or portions thereof) \$23,121,769; costs chargeable to U. S. in respect of cost-plus-a-fixed-fee contracts and accrued fees \$47,589,509; inventories of contracts in progress, purchased materials and parts (less progress payment \$62,650 and reserves for losses of \$545,000) \$4,594,146. Investments and other assets \$3,213,880; emergency plant facilities \$10,304,501; fixed assets (less reserves of \$2,730,371 for depreciation and amortization) \$5,301,099; deferred charges \$277,069.

Canadian Subsidiary

Current liabilities \$97,980,587 including accounts payable \$16,567,339; accrued wages, taxes, etc., \$7,060,154; provision for refunds to the U. S. on contract price adjustment \$32,520,387, on account of renegotiation of profits \$9,300,000; provision for net of refunds and adjustments consequent upon a retroactive termination, in process of consummation, of a certain Emergency Plant Facilities Contract \$674,361; provision for prior years' Federal taxes \$737,832; provision for 1942 Federal taxes (less U. S. Treasury notes of \$20,019,200) \$9,371,050; advances on sales contracts (less cash balances restricted to use for performance of related cost-plus-a-fixed-fee contracts) \$21,384,290. Notes payable \$9,407,071; reserves \$7,810,067; capital stock \$5,412,270; paid-in surplus \$8,142,063; earned surplus \$7,767,055.

Boeing Aircraft of Canada, Ltd., Balance Sheet, Dec. 31, 1942 shows assets in Canadian dollars of \$2,832,170. Current assets were \$2,672,611, including cash \$27,203; accounts receivable \$748,445; Victory Bonds \$150,409; advance payments on material \$55,840; expended for Canadian Government on tools and equipment \$105,340; inventories (less progress payments of \$12,877,199) \$1,585,372. Fixed assets (less reserve for depreciation) \$144,520. Deferred charges \$15,039. Current liabilities were \$2,327,125 including loans \$510,000; accounts payable and accrued expenses \$1,408,629; reserve for contract adjustments \$329,039; reserve for taxes \$79,456. Advances from U. S. affiliated companies \$129,304. Capital stock \$693,046; surplus (deficit) \$317,305 (red).

COMPARATIVE SALES & NET PROFITS



Another tough heat-treating problem solved with

Gulf Super-Quench



Above—Parachute cord braider clip as water-quenched. Note distortion.

Right—Same part Super-Quenched. No change in original shape.

Revolutionary new Quenching Oil gives parachute cord braider clip the necessary springiness without distortion, reduces rejections, increases production.

A manufacturer of machines for braiding parachute cords had difficulty in heat-treating the bobbin clip, one of the vital parts.

A water quench was too severe, causing such distortion that each clip had to be carefully straightened, which required the expenditure of hundreds of man hours each month. In spite of this, there were many rejections.

Conventional quenching oil would not give the necessary springiness in the clip. Consulted on the problem, a Gulf Service Engineer recommended Gulf Super-Quench, which achieved the necessary springiness without dis-

tortion. Result: a substantial increase in production, rejections almost entirely eliminated.

In plant after plant, this revolutionary new quenching oil is achieving remarkable results. Many parts for the weapons of our armed forces are being made harder and stronger with Gulf Super-Quench than was ever before possible with oil quenching. And yet Gulf Super-Quench avoids distortion and cracking.

Here's the important reason why Gulf Super-Quench is a superior quenching oil: It has *dual-action*—a faster cooling rate through the hardening temperature range, and the slow speed of conventional quenching oil below the hardening temperature range.

Gulf engineers are at your service in 30 states from Maine to New Mexico to consult with you on your quenching problems.



GULF OIL CORPORATION • GULF REFINING COMPANY • PITTSBURGH, PA.

G-1

G-2

G-3

G-4

Better decisions come out of CONFERENCES

No general would send his forces into battle without first weighing with his staff every angle of the problems involved. To be ready for any emergency . . . at any time . . . he keeps his staff of military experts available constantly.

To every construction job Thomas Bryan & Associates bring a *conference of experts*. Principals and personnel include men distinguished in the fields of architecture, engineering, construction supervision and cost control.

Thus every problem is met promptly . . . at any time . . . by careful study embracing the exchange of ideas by experts in related fields.

Send for Brochure

—Explaining how a modern minded firm achieves a better building service by handling all details from analysis of need to completion.

Address: LAFAYETTE, LOUISIANA

**THOMAS BRYAN
&
ASSOCIATES**

ARCHITECTS
BUILDERS
ENGINEERS

General Staff
Designations:

G-1: Personnel
G-2: Intelligence
G-3: Training
G-4: Supply

DOWN THE

Manufacturing
LINE

Superlatives and extremes run riot in the aircraft industry to a greater extent, perhaps, than any other U. S. enterprise . . . Take the case of the man with the mane of flowing gray hair whose murals decorate the ballroom of Buckingham Palace and the mansion of the Maharajah of Kapurthala and whose skill is now employed developing new aerodynamic designs in the engineering research department of the Douglas El Segundo plant . . . He is A. P. Baldecchi, internationally renowned as painter and sculptor, who has a personal peeve at Mussolini and figures the greatest service he can render in these art-delaying years is to put his genius to work helping win the war . . . He's devising an airscoop that will permit the greatest intake of air with the least amount of drag—to give new speed to the warplane of tomorrow.

Of the 157 Certificates of Individual Production Merit and Letters of Honorable Mention awarded recently by the War Production Board, 12 went to workers employed at Beechcraft in Wichita, Kan. . . Which is a good example of labor relations . . . A new labor-management committee has been organized at Brewster Aeronautical Corp. with the assistance of the UAW-CIO local and the blessings of President Frederick Riebel, Jr. . . It will concern itself with the adoption of new suggestions, conservation of material, salvage, care of tools and equipment, improvement of quality, reduction of rejections, general production problems, training, safety, absenteeism, transportation and housing, nutrition and health, morale and industrial and public relations.

For the second time, President J. H. "Dutch" Kindelberger of North American Aviation, Inc., has invited employees of the Dallas division to "take down their hair," and they pulled no punches in replying to a questionnaire as to what they think about the company, working conditions, etc. . . In the "gripe corner" 8.2% had pointed criticism of employees who loaf on the job, 7.9% complained about youthfulness of foremen, 10.2% wanted Sunday off . . . Answers to Dutch's question, "What do you think the future holds for this company and its employees?" were: Expect to be laid off when war ends, 10.7%; Plan to quit and return to my former business, 9.1%; Hope NAA will still need my services, but doubt it, 33.6%; expect NAA will need my services and intend to stay with the company, 44.55%.

You'd never expect to see a bevy of socialites in a grease-stained section of an aircraft factory, but the patriotic innovation of Mrs. John Towers, wife of Vice Admiral Towers, should be appropriately recorded. . . Consolidated Vultee is inaugurating a feeder shop to sort rivets in Coronado and Mrs. Towers, as a full-fledged employment interviewer, has some 200 wives and daughters of military men, and socialites, anxious to get into the work. . . It started with Mrs. Towers reporting at Plant 2 every day at 6 a.m. . . Recently, through arrangements with the company, she started groups of women working assiduously in her own apartment, sorting out the millions of rivets swept up from the factory floors, instead of playing bridge. . . Sorting was done on card tables, stands, and even the floor. . . The idea clicked so well, these socialites will now have their own sorting shop.

Censorship often works mysteriously, as most of the country and the aircraft industry in particular, have come to know . . . In reply to a recent National Aeronautical Association query, AAF Materiel Command wrote: "No information is releasable at the present time on the caterpillar-landing-gear development. This project is classified and there are no indications of the classification being lifted in the near future." . . . Same week, the official Patent Office Gazette—available for a dime—listed patent No. 2,315,901 granted to Owen Finley Maclaren, and assigned to Maclaren Undercarriage Co., Ltd., London, "which patent, with drawings, covers the claims for an endless track running element for aircraft and land vehicles."

Under a heading "Don't Show This Chart to Your Friends in the Service," the Ryan Aeronautical Co. employees' magazine recently attacked the absentee problem by running a chart showing that attendance at the factory was much higher on pay-days than other days, and lowest of all on Saturdays and Mondays. . . Weekend lulls in attendance were given such biting labels as "Holidays for Hitler" and "Complacency Weekend" and beside them appeared drawings showing 100% attendance by soldiers, sailors and marines at the battlefield. . . Employment Manager Frank Saye said the effect was immediate and so shocked Ryan workers that gain of as much as 32% in average attendance have been reported since Jan. 1.

It comes like the passing of an old and dependable landmark, but there is every indication that the famous twin-tail assembly of the B-24, the badge of identification of Consolidated-Vultee's four-engined bomber, will be no more. It will be replaced in forthcoming planes by a single tail, according to well-founded reports in West Coast circles. There has been no announcement by the company, but sky gazers have been puzzled by the sight of the familiar plane with a single tail.

C. G.

THE TOMORROW YOU'RE FIGHTING FOR:

Foley

(Continued from page 56)

other departments shall constitute a recognized rating for the complete specific air carrier operation. The maintenance of these standards should be assured by the periodic inspection of a qualified representative of the regulatory body. This would leave no trace of the honor system, which some suspect can only wind up with the honor lost by a "system." The operator would be expected only to "operate" up to or above standards. Compliance paperwork would be minimized yet enforcement could be as stringent as required.

Enforcement is due more than a passing comment. Violators must be penalized but in the optimum program we suggest that care be given to the overall effect of these penalties so that "legislation" of unnecessary costly extra-compliance does not creep into the picture. Single penalty upon the violator and detailed study of all the angles should precede any mass ruling which affects all operators or all aircraft. We must remember that a blanket stipulation is justified only when all aircraft or all operators under the "blanket" are at least possible violators. It is not at all true that a hazardous installation in a DC-3 must be equally hazardous in a C-87. Our restrictions must be fair and appropriate.

A word might also be said about the degrees of surveillance maintained over established carriers. The industry, while comparatively young, has a substantial background from which intelligent observations can be drawn. It must seem altogether sensible, as well as fair, that an airline with an excellent safety record over a prolonged period does not and cannot require the number and severity of inspections due a new licensee, or one which has proven itself low in its operating standards. The excessive time spent in equal control of the entire industry might better be spent in giving new operators, etc., a sounder groundwork on which to base their futures. It is the old principle of using good influence where good influence is needed, and not where there is a superfluity.

We have only been able to touch upon a subject of a million ramifications. Our proposal to provide practical standards, not legal regulations, may in this embryonic stage be shot full of holes. Nevertheless, we feel that our subject becomes of growing importance in the days ahead and must be studied by both parties concerned. We repeat that our position is sincerely that of an observer unaware of any existing regulations. Forgetting anything that we may know of the present status of the subject, we have tried to outline a few pertinent ideas for your comments. On so delicate a subject, we lay ourselves open to the blasts of many; but if some single idea for the future may be a product of the above considerations, we shall not regret our temerity.

ELASTIC STOP NUT Corp., Union, N. J., has launched an extensive advertising campaign to familiarize industry and the public with the "self-locking, vibration-proof" stop nut being produced for the war effort.



ALASKA

...THE 49TH STATE?

Will air transportation add another star to the flag? Alaska... amazing land of unmeasured wealth... gold... copper... salmon... mink and blue fox furs... untouched platinum, tin and tungsten... awaits only the transportation facilities* to develop it.

Alaska cost us 7 million dollars. Now we're spending at least twenty times that to make it a mighty sword aimed at Japan. We're dredging harbors, carving airfields and roads out of the hills, trees and tundra.

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You'll visit homesteading Alaska friends by air... see motor roads replace dog trails. You'll fly to Alaska on business... to prospect... or catch 30-inch trout.

Air Transportation and Alaska are old friends... growing together... fighting together. As soon as they've finished today's job Air Transportation will introduce you to Alaska... the 49th State.

*Nearly six months before Pearl Harbor, Western Air Lines applied for a mail and passenger route stretching from its present terminus at Lethbridge, Canada, to Nome, Alaska, a distance of 2244 miles.



General Offices: Lockheed Air Terminal, Burbank, Calif.



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...for internal and external bracing. Streamline, square, round.



NO. 6612-A



Damon

(Continued from page 58)

in the industry. A similar situation can be easily avoided at the conclusion of this war provided there is established at this time a strong forward air policy which will enable the aircraft manufacturers to set their sights and prepare now. If this is not done and done now, we will have to race just as feverishly to buy today tomorrow as we are now trying to buy back yesterday today.

"While some announcement from the U. S. Committee on International Air Policy may be forthcoming, the various aircraft companies are faced with the problem of planning for the future. They must do this if they are to survive. Practically all of them are aware that undoubtedly the competition is going to be greater and for the purpose of meeting this competition and caring for the change-over from one type of production to another many of the manufacturers have set up post-war reserve funds out of current profits. However as simple as that might appear there are many more truly complex problems they must solve before they are again pursuing normal business.

Profits Limited

"No business today can make large profits. There are many rising and unusual costs including the training of workers to replace those going into the armed services, the multitudinous paper work required by the various government agencies. Profits are severely limited by taxation reaching a scale almost confiscatory and in the case of companies doing a large volume of business today practically all contracts are subject to renegotiation, the net effect of which is to discourage and penalize initiative, economy and reserves for peacetime conversion and development. While it is true that the price adjustment groups are instructed to renegotiate and to take into account such factors as management efficiency and probably do so, the ultimate result is very disappointing to an industry which in peacetime did not make money and in time of war is prohibited from doing so. While we have every reason to hope that this war will be the last, a glance through any history book will teach us that this can hardly be the case and while the United States will win this war, and the peace to follow, I fear we may easily lose the next war, even as did France in 1940, by socialization and stagnation of our defense industries deprived of private capital and initiative by an unwise economic policy at this time. It should be urged that price adjustment boards in determining "excess" profits should fully eliminate reserves properly established and protected by suitable resolutions of the boards of directors for post-war conversion, development and construction.

"Today only a few of the aviation companies own their own plants. Most of them have expanded many times, both in space and manufacturing equipment. This has been done for them by the Government through its Defense Plant Corporation. What the aircraft manufacturer would like to know is what is going to happen to his plant, of which, in fact, he owns very little.

"On the supposition that at the conclusion of the war the Government says to the manufacturer, 'We will make you a present of the plant DPC built for you, but naturally we expect to have a part in the direction of your company,' the manufacturer would naturally have some reluctance to entertain such a proposition, since he will, by that time, have had his fill of government in industry. Should the government offer the facilities to make an outright gift, with no strings attached, the manufacturer is still apt to view it with a jaundiced eye, because this enlarged plant will then constitute for him a major tax problem unless he could have some assurance that this country was going to have a strong forward air policy, which would warrant his keeping any worthwhile proportion of his present personnel at work. He naturally cannot do this unless orders are forthcoming, and orders may be years in developing unless our air policy is defined now—not six months after his teams of production men, engineers, and designers have scattered to the four winds.

Announce Policy

"If the Administration which is in power when the Peace comes reverses the trend of the past 10 years, steps will probably be taken to divorce government from industry. Such action would immediately reflect itself in stimulating a continuation of private industry, and that would be healthy for our economic life. I might suggest, as a solution to the problem of how best to dispose of the thousands of facilities now owned by the Defense Plant Corporation and on loan or rent to various manufacturers, that DPC announce now its policy to rent under terms or dispose of by sale such properties promptly after the peace. Such an arrangement may show a bookkeeping loss, but while sounding fantastic, the economics of this suggestion are sound. When a Flying Fortress drops \$30,000 worth of bombs on Berlin we make no effort to recover the cost. They have served their purpose; likewise, the plants erected for the specific purpose of war materials have served their purpose and should be considered as a war expenditure and loss.

"The reconversion problem is not exclusive to aviation. It covers the entire American industrial scene. The automobile manufacturer who converted his plant at government expense to make machine guns and tanks is wondering if the government is going to stand the reconversion expense through tax allowance. The same is true for the playing card manufacturer now making targets, and the piano companies making aircraft parts.

"I think that, in any cases, and particularly among the smaller defense industrial manufacturers, there will be a tendency simply to close the doors and call it a day. Probably more than one smart management will tally the score, discover that their stockholders can be reimbursed for the original investment and they can, like those Arabs, fold their tents and slip into the darkness. The ever growing thought that government may be in industry more than ever before will encourage some managements to do this. Such indirect encouragement will manifest itself at a most inopportune time. It will come at a time when the entire economic and industrial resources will be called upon to present an even stronger front than has

(Turn to page 70)

Lockheed, Vega Prepare Data For AWPC on Child Care Problem

A guidepost toward solution of one of the growing problems in the aircraft industry—the question of providing care for the children of mothers at work in war plants—has been prepared by two West Coast aviation firms for the Aircraft War Production Council, Inc.

With recent War Manpower Commission figures showing that 70 to 80% of the workers now being hired by many aircraft companies are women, the problem of child care is taking on new proportions and indications are that the industry will find it one of the most serious factors of personnel maintenance.

The West Coast report was compiled by Lockheed and Vega Aircraft Corporations' industrial relations research departments, based on child care questionnaire submitted to workers at Lockheed, Douglas, North American, Northrop, Vega and Vultee plants.

This report pointed out that the supply of women workers who have no children is rapidly being exhausted. Airframe companies of Southern California are now hiring many women with children, and the percentage with children who need care during working hours is expected to increase rapidly. The survey was utilized only to point out the need and the trend, rather than as a basis on which to plan actual child care facilities. Four conclusions were reached in the analysis:

1. Almost one-half of the mothers are working during the night hours.
2. Only one-third of their husbands are working on the night shifts.
3. In at least 40% of the cases surveyed, the mothers and their husbands are working on different shifts.
4. Many additional women would send their children to nursery schools if they were made available and were more widely publicized.

Daytime care of children will not of itself suffice, nor can playground facilities alone meet the need, it was pointed out. The primary recommendation was that nursery schools will have to increase in number and extend their working hours. Both day and night child care facilities must be provided.

The survey covered 4,195 working mothers and a total of 8,000 children. It was found that 58% of the mothers work the day shift, 29% the swing shift, and 13% the graveyard shift. Thus 42% work during the night hours.

A definite occupational analysis was obtained on only 43% of the husbands of these mothers. It showed 66% on the day shift, 24% swing shift, and 10% graveyard shift, thus showing a smaller percentage of husbands than of mothers working the night hours.

The analysis showed the closest agreement (74%) in hours worked by both mothers and husbands in those cases in which the mother is on the day shift. There is the least agreement (22%) in cases in which the mothers work on the graveyard shift. Almost half (45%) of the husbands of swing shift mothers work the same shift. In about 40% of all cases, mothers and their husbands do not work during the same hours.

The questionnaire listed 2,425 children under school age. Mothers' reports

showed that 48% of these children are cared for away from home, and 52% within the home. The type of outside-the-home care showed: 12% cared for in boarding homes, 17% in nursery schools and nurseries, 23% by neighbors, 40% by relatives, and 8% by others. Only 5% of the children of mothers on the swing shift are cared for in nurseries, whereas 21% to 23% of the children of mothers on the day and graveyard shifts are in nurseries.

Of children kept at home, 56% were cared for by relatives and 44% by hired help or neighbors. Mothers reported that they pay an average of \$1 per day for care of preschool children outside the home, and \$1.35 when cared for in the home.

These were among the significant factors offered as a signpost for the industry in Southern California in considering this new personnel problem. More nurseries, and night-and-day nursery hours appeared to be the first step.

Recently additional nurseries have been authorized in various industrial centers under the Lanham Act funds appropriated by Congress, but these steps alone are not expected to be sufficient.

In a report on women in industry issued May 3, WMC Chairman Paul V. McNutt said, "Aircraft management has done an outstanding job in utilizing effectively this new and inexperienced source of labor. Many firms have abandoned traditional hiring attitudes and made every effort to adapt the job to the worker instead of clinging to the idea of finding a worker who fitted the job. In this connection, aircraft firms have redesigned tools and machinery to fit women's slighter strength and stature, have installed lifting devices wherever possible and have broken down complicated jobs into their simpler component parts."

McNutt said that West Coast assembly plants have taken the lead in conversion of their plants from manpower to womanpower. The proportion of women workers runs about 45% in western plants, about 33% in the Middle West, and about 26% along the Eastern seaboard, according to the WMC figures.

Grumman Reports '42 Income of \$2,535,848

Grumman Aircraft Engineering Corp., Bethpage, N. Y., reported recently a net income for 1942 of \$2,535,848 before credit for post-war tax refund and provision for post-war readjustment. Net income for 1941 was \$1,066,683.

The report, signed by Le Roy R. Grumman, president, listed the provision for federal income and excess profits taxes at \$9,995,267, against \$1,100,000 in 1941. Reflecting the output of planes and parts, gross sales rose to \$143,155,931, or approximately six and one-half times that of 1941, 16 times the 1940 figure, and 32 times that of 1939.

More airplanes were delivered during the last two weeks of November, 1942, than during the entire year of 1940, the report observed.

On the Labor Front

BOEING AIRCRAFT OF CANADA, LTD. Vancouver, B. C.

Company closed its three plants, action being taken because workers took 10-minute rest periods in defiance of government orders.

BOHN ALUMINUM & BRASS CORP., Detroit, Mich.

NWLB granted 4c an hour increase to UAW-CIO workers at 8 plants, retroactive to Dec. 17, 1942, under "Little Steel" cost-of-living formula.

BRIGGS MANUFACTURING CO., Detroit, Mich.

Company is directed to hold election for plant protection employees to vote for or against representation by UAW-CIO.

CONSOLIDATED AIRCRAFT CORP., Ft. Worth, Tex.

Dispute with IAM-AFL over check-off, wages, overtime payment provisions after termination of the war, certified to NWLB.

CURTIS-WRIGHT CORP., Buffalo, N. Y.

AFL members at airplane division postponed asking for release after receipt of telegram from NWLB promising action on wage case pending since November.

FAIRBANKS MORSE & CO., Three Rivers, Mich.

NWLB granted UER&M-CIO workers bonus of 4c an hour retroactive to June 28, 1942, and nightworkers bonus of 5% retroactive to Sept. 27, 1942. Also directed that starting wage be increased from 50c to 55c an hour and contract include voluntary maintenance of membership and check-off clauses.

FAIRCHILD ENGINE & AIRPLANE CORP., N. Y. C.

NWLB advised company it had approved wage rates in job classification schedule at 3 plants: Hagerstown, Md., Burlington, N. C., and New York City.

FEDERAL BEARINGS CO., INC., Poughkeepsie, N. Y.

Striking employees were wired by NWLB requesting them to return to work to prevent serious interruption of war materials production.

FORD MOTOR CO., Dearborn, Mich.

Production resumed after unauthorized strike at steel foundry. Employees at River Rouge plant quit work over argument on operation of swing shift.

FRIGIDAIRE DIVISION, GMC, Detroit, Mich.

Company is directed by NLRB to hold election for employees to vote for or against representation by UER&M-CIO.

GENERAL MOTORS CO., Detroit, Mich.

Charles E. Wilson, president of GMC, testified before a House Committee that "the dual allegiance that will arise when foremen are unionized will imperil their ability to fulfil their responsibility as an integral part of management."

Workers at Allison Division making airplane engines struck, "seriously impeding production."

NORTHROP AIRCRAFT, INC., Hawthorne, Cal.

LaMotte T. Cohu, chairman of the board, sent a wire to WMC chairman McNutt and WPB chairman Nelson contradicting CIO statement alleging discrimination against 500 workers by layoffs.

PIPER AIRCRAFT CORP., Lockhaven, Pa.

Striking workers were requested by NWLB to return to work because work stoppage was seriously holding up production. Upon refusal, NWLB stated that until work was resumed, the Board would take no action on dispute.

SOLAR AIRCRAFT CO., San Diego, Cal.

Company is directed to hold election for production, maintenance and other selected employees to vote for IAM-AFL, UAW-CIO, Solar Employees Association, or none of these.

WRIGHT AERONAUTICAL CORP.

Controversy over contract negotiation is certified by Secretary Perkins to NWLB.

—MANUFACTURING—

North American Makes Dive Bomber Version Of Mustang Fighter

A dive-bomber version of the P-51 Mustang fighter, designated the A-36, and described as "a fighter, a ground attack plane and a bomber" is being produced by North American Aviation, Inc., Inglewood, Cal.

To make the dive bomber version, only 200 lbs. were added to the normal gross weight of the fighter, company said, explaining that the A-36 is powered by a 12 cylinder Allison engine "with a flying speed in excess of 400 miles per hour." Ceiling is 30,000 feet, and normal diving speed with brakes extended is "450 miles an hour."

Four hydraulically-operated dive brakes, one above and one below each wing, were installed to adapt the plane for dive bombing. One bomb rack was installed in each wing to hold either bombs or droppable fuel tanks.



New A-36: Three of North American's A-36s, which are dive bomber versions of the Mustang, are shown in formation over California. The company says they are the world's fastest dive bombers, with a flying speed in excess of 400 mph.

DPC Authorizations

BREEZE CORPORATIONS, Inc., Newark, N. J., to provide expansion of facilities at a plant in New Jersey at cost of \$250,000.

GENERAL MOTORS Corp., Detroit, Mich., to provide additional equipment for a plant in Indiana at a cost of \$760,000 resulting in overall commitment of approximately \$2,650,000.

STANDARD STEEL Corp., Los Angeles, Cal., to provide equipment for a plant in California.

BELL AIRCRAFT Corp., Buffalo, N. Y., an increase in its contract to provide additional plant facilities in New York state at a cost of approximately \$4,500,000, resulting in an overall commitment of approximately \$22,000,000.

ERIE RESISTOR Corp., Erie, Pa., an increase in contract to provide additional plant facilities in Pennsylvania, at a cost of approximately \$100,000; overall commitment of \$400,000.

MURRAY CORP. OF AMERICA, Detroit, Mich., to provide plant facilities in Pennsylvania at cost of \$4,000,000.

FIRESTONE TIRE & RUBBER Co., Akron, O., to provide plant facilities in Georgia at cost of approximately \$600,000.

CAMFIELD MANUFACTURING Co., Grand Haven, Mich., to provide additional equipment for a plant in Michigan, resulting in overall commitment of approximately \$120,000.

Outdoor Production Line is Established

What is probably the first outdoor aircraft production line to be established in the U. S. has been set up by the Tucson, Ariz., division of Consolidated Vultee Aircraft Corp. With nothing but the sky for a cover, B-24 Liberators already are moving along this new modification unit.

It is an exact duplicate of production lines located in mammoth hangars, but the outdoor assembly undertaking immediately brought up the problem of keeping the all-metal bombers reasonably cool under the blistering sun. Under ordinary conditions, the interiors would become like ovens and the skin of the planes too hot to touch.

To overcome this difficulty, portable evaporative coolers are to be installed for each plane on the line. The coolers are of the same type used to condition the hangars, and which are found in most Tucson homes. They will have a capacity of approximately 3,000 cubic feet per minute and will keep inside temperatures of the bombers low enough to assure comfortable working conditions.

W. R. Lawrence, division manager, said he believed the coolers would allow the outdoor line to keep pace with those which have hangar protection.

Damon

(Continued from page 68)

been necessary during our years at war. It will come at a time, when, unfortunately, approximately 37% of the entire population of this country will be undergoing an economic adjustment.

"That is another reason why the aviation industry desires now a more or less comprehensive picture of what this country's future air policy will be. Our transition from a spot low on the industrial list has been rapid, and I can assure you that we are extremely anxious to prevent any relegation to the industrial minor leagues. Frankly, I will state that part of our anxiety is selfish, which is natural, but it is further motivated by our desire to fulfill, if possible, our obligations, whether actual or moral, to aviation's more than million workers, and greater than all, we want to keep this manufacturing and transport phases of aviation strong enough in order that never again will there be a mad scramble to buy back yesterday, for our national safety.

"On the other problem I mentioned, all international and global air service may fail if we do not have international freedom of the air. Certainly such freedom should apply to the United Nations and to neutrals, and, under International Policy, ultimately to all who do not demonstrate aggressor tactics. Specifically, the United States should demand for itself, and be ready to offer to any non-aggressor nations, a non-exclusive use of world wide commercial air bases for the picking up and discharging of passengers and freight and fuel and service in International Service. Such rights need not include cabotage rights of intra-national travel within any nation."



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WHITING
CORPORATION

Aviation Division

Mass Production Is Promised Next Year For 'Constellations'

Lockheed's Constellation, the C-69, has an important place in the company's program, President Robert E. Gross of Lockheed Aircraft Corp., Burbank, Cal., told stockholders at their annual meeting on May 4.

Tooling is under way for mass production, he said, and by next year "Constellations will be rolling off the assembly lines."

Pointing out that the material situation is improving, Gross stated that in April more B-17's were turned out than during the last seven months of 1942. Production of Lightnings is maintaining a steadily increasing figure and Vega Ventura, being built as a Navy sub-chaser, is produced at maximum requirement each month, he said.

April was the biggest production month in the history of Lockheed and its subsidiary, Vega, Gross said.

All directors and officers of Lockheed were reelected.

Guiberson Predicts Diesel Plane Engines

Giant diesel transport planes carrying cargo to remote corners of the world are envisioned for the post-war period by Allen Guiberson, executive vice-president of the Guiberson Diesel Engine Co., Dallas, Tex.

"Diesel power, with its safety, economy, and long cruising range, will propel huge ships now under development by our leading aircraft companies," Guiberson said at the annual meeting of the company's stockholders on Apr. 13.

Although the company is devoting all of its facilities to production of tank engines, research and development of a proposed diesel engine for planes is going forward, he added.

Stockholders of the company recently reelected all directors, and the directors reelected the following officers: S. A. Guiberson, Jr., president; Allen Guiberson, executive vice-president; N. G. Guiberson, vice-president; Harry S. Zane, Jr., vice-president; Alex P. Smith, vice-president and controller; R. D. Wallis, secretary-treasurer.

Consair-Vultee Plans New 4-Motored Bomber

A new four-motored, long-range bomber "that will far out-perform the present B-24 Liberator" soon will go into production in Texas, it was announced April 5 by Harry Woodhead, president of Consolidated Vultee Aircraft Corp., San Diego, Cal.

Woodhead revealed that the company's Texas and California plants are producing "about 70% of all Liberator bombers." He predicted that the new bomber will perform better and carry more bombs than previous models.

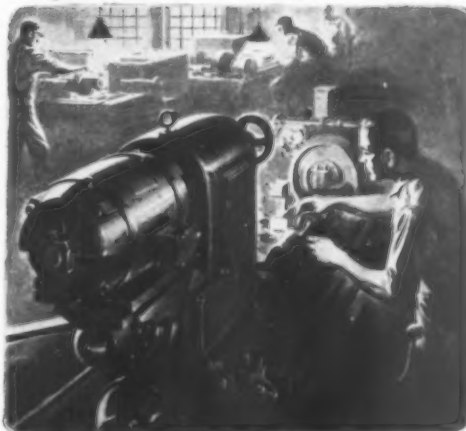
"Consolidated Vultee now is delivering four-motored bombers to the Army and Navy at the world's lowest price for this type of aircraft due to the reduction in man-hours needed to make Liberators," Woodhead asserted.

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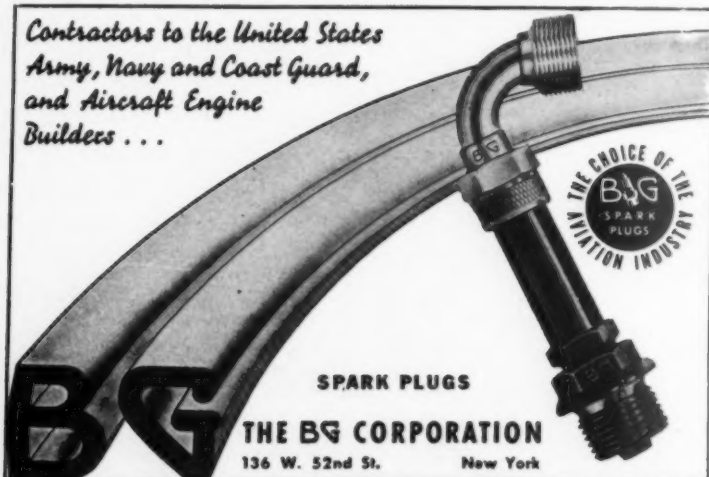
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MANUFACTURING

NASH-KELVINATOR Corp., Detroit, Mich., has announced net profit for the quarter ended March 31 of \$590,204, after all charges including provision for income tax. The amount compares with \$672,360 for the corresponding period of last year.

STEWART-WARNER Corp., Chicago, Ill., directors have voted a semi-annual cash dividend of 25 cents per share on the \$5 par value common stock, payable June 1 to stock of record at the close of business May 8.

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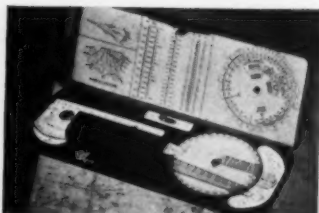
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CORPORATION

Navigational Instruments

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Mineola, N. Y.

Martin Grants Free Use of Mareng Cell Patent

The Glenn L. Martin Co. has granted the government free license to the Mareng Cell, one of its most lucrative patents. Glenn L. Martin, president, announced in April. The Mareng Cell, named for "Martin Engineering," is a synthetic rubber fuel tank, introduced in 1940 as America's first self-sealing, bullet-proof fuel container for airplanes.

Martin said his company granted the free license "in the interest of hastening victory." It is in keeping, he said, with the spirit of the Aircraft War Production Councils, which were formed to exchange engineering and manufacturing experience to speed war production of aircraft. He added, however, that the grant was for the duration only, with full rights reverting to the company in the post-war period.

The Mareng Cell can be stuffed into wing apertures like a football bladder. It can be pulled out and another substituted in a minor service operation. Formerly, it was necessary to remove wings when a metal tank was damaged.

Aero Center Planned by Columbia, Institute

Columbia University is collaborating with the Institute of the Aeronautical Sciences, Inc., New York, N. Y., in the development of an aeronautical center at Sands Point, Long Island. Property has been donated to the institute by Mrs. Daniel Guggenheim.

The university will use the Minta Martin Aeronautical Laboratory building for research work. The institute will establish an aeronautical library and museum, the library to be a branch of the Institute's Paul Kollsman Library, which loans aeronautical books by mail without charge to persons in various parts of the country.

In the museum will be "an interesting collection of pictures, airplane models and interesting relics of famous flights," said the announcement. Eventually, when conditions permit, the Institute will establish laboratories for research and enlarge the library and museum.

Plans for the establishment of an aeromedical laboratory have been postponed until the medical specialists required to undertake such research work are available, the announcement added.

'42 Profit of \$3,037,504 Reported by Ex-Cell-O

Earnings of Ex-Cell-O Corp., Detroit, Mich., totaled \$3,037,504 during the fiscal year ended Nov. 30, 1942. This was equal to \$7.62 per share on the 398,806 shares of \$3 par value common stock outstanding, said the company's annual report.

Net working capital increased \$2,165,353 to \$4,778,373. Cash on hand totaled \$6,971,820, and, in addition, \$10,033,245 of U. S. Treasury Notes were held to be used in 1943 for payment of federal taxes on income. Due to increased volume, inventories increased \$3,673,472 to \$8,573,525. Inventories, as well as material commitments, are substantially covered by customer's orders, the report stated.

Notes payable increased to \$3,235,374 during the year.

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Financial Briefs

McDONNELL AIRCRAFT Corp., St. Louis, Mo., announces it has signed a contract with nine banks for a Regulation V loan of \$6,000,000 to run until Dec. 31, 1945, or until date of final government audit of company's last war contract, whichever is earlier.

AERO SUPPLY MANUFACTURING CO., Inc., Corry, Pa., reports sales for quarter ended March 31 totaled \$5,014,676. Final net income is undetermined, until renegotiation refund provision and income tax provision are established.

RYAN AERONAUTICAL Co., San Diego, Cal., and wholly owned subsidiaries had gross revenues for four months ended Feb. 28 of \$7,438,258 which resulted in net profit of \$287,047, or approximately 65c per share after providing for all charges except renegotiation. Revenues were up 25% over corresponding period.

MINNEAPOLIS-HONEYWELL REGULATOR Co., Minneapolis, Minn., reports net income for first quarter of \$681,621, including an estimated post-war refund of taxes of \$184,877, and after deducting charges, Federal taxes and reserve for possible renegotiation. This was equal to \$1 a share of common and compared with \$669,931 or \$1.01 a share in 1942.

EX-CELL-O Corp., Detroit, Mich., reports for quarter ended Feb. 28, subject to audit and year-end adjustments, a net profit of \$723,478 after charges and a provision of \$5,769,292 for federal income and excess profits taxes and possible price adjustments. This was equal to \$1.81 a share on common, and compares with \$959,584, or \$2.41 a share.

RYAN AERONAUTICAL Co., San Diego, Cal., reports net profit, including wholly owned subsidiaries, for four months ended Feb. 28, 1943, was \$287,047, or 65 cents a share. Net profit was after providing for all charges except renegotiations, but including federal income taxes.

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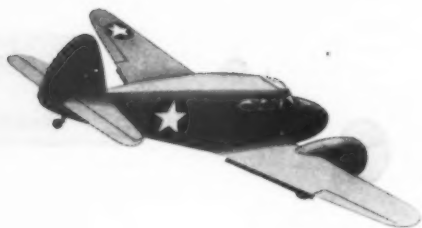
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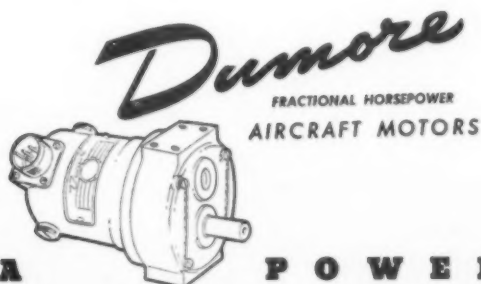


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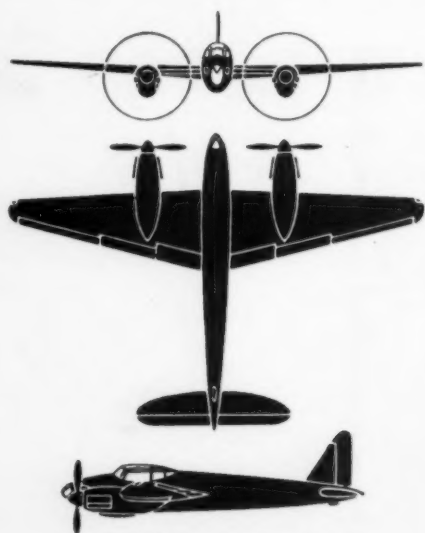


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